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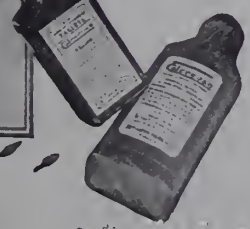

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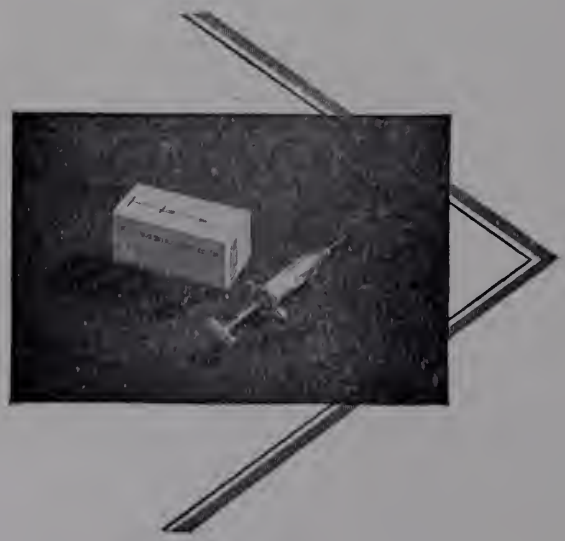

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SOME OBSERVATIONS ON PLASTIC SURGERY OF THE FACE *

By JOHN S. HORSLEY, JR., M.D.
Richmond, Va.

The goal of plastic surgery should be the restoration of a part to normal. This normal includes, primarily, function, and, secondarily, appearance. In surgery of the face, appearance, or the cosmetic condition, deserves such effort as the best ability an up-to-date, skilled surgeon can give. The various nevi, skin cancers, congenital deformities such as those associated with harelip and cleft palate, acquired deformities as results of burns, infections, and automobile accidents are only some of the more important conditions that demand plastic surgery of the face.

The general health of a patient who requires plastic surgery is highly important. In order to determine this accurately before any major plastic procedure, a general history and physical examination should be done, and the customary laboratory work, including blood Wassermann, urinalysis, hemoglobin determination, red and white blood-cell counts, blood smear, differential count, coagulation time, and other special laboratory work if either history or examination indicates it. Such conditions as rickets, secondary anemia, upper respiratory infection, malnutrition, blood diseases, hemophilia, and purpura are definite contraindications for m- plastic work, particularly in children. Many needless operations and poor results will be obtained if this feature is not corrected.

Asepsis is important, though gentle, clean surgery followed by proper pressure dressings and detailed after-care is also important. Another point that can not be stressed too much is the control of hemorrhage. Blood clots beneath a graft will cause all, or a portion, of it to die and, in addition, invite infection.

The principal factors in the production of small scars are the complete relaxation of tissues, prevention of infection and hematomas, clean incisions made at right angles to the surface of the skin, careful suturing with the tendency to eversion of the skin edges, dressings with even and proper pressure (as the marine sponge dressing), and early removal of stitches and other painstaking details. Incisions should be made parallel to Langer's lines of tension if the minimal scar is to be obtained. The intelligent use of radium and the röntgen ray are often very helpful in reducing and preventing hypertrophied scars and keloids.

Skin grafting is one of the most important procedures used in plastic surgery. Vegetable grafting is superficially similar to skin grafting, though in reality it has little in common. Vegetable grafts live upon their hosts always as separate individuals acting similarly to a parasite. Skin grafts, however, become

* Abstract of a paper read by invitation before the Central Tri-State Medical Society at Huntington, West Virginia, September 19, 1929.

From the Department of Plastic Surgery, St. Elizabeth's Hospital, Richmond, Virginia.

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a part of the tissue into which they are transplanted. Grafts live best when taken from the patient's own body, yet grafting from one individual to another may occasionally prove successful. The many miraculous cases stated in newspapers are either exaggerations bordering on fabrications or have been reported before the final results. Grafts taken from another of the same species may seem to flourish at first, but are likely to slough or be absorbed in the course of time. Attempts have been made to transplant tissues from one species to another, or from a lower animal to man. Successes are reported, but better results are obtained by grafting from the same species and the very best results by grafting from the same individual. One of the earliest and most remarkable records of grafting from animal to man is said to have occurred during the seventeenth century. A surgeon filled a defect of the skull and scalp with a bone and skin graft from a dog. After it had "taken," the church, under threat of excommunication, compelled the operator to remove the transplant. Grafts have been obtained from the lining membranes of eggs, from frogs, lizards, chickens, pigs, dogs, cats, guinea pigs, rabbits, and other animals. Skin has been successfully transplanted from man to lower animals. The technique of skin grafting has been greatly advanced by careful and gentle experimental work on lower animals. The exact time that the pedicle of a large flap can

FIG. 1 (Case 1).—Baby boy, R. L. B., twenty months old on admission. A right congenital unilateral incomplete harelip with a flare deformity of the right nostril is present.

FIG. 2 (Case 1).—Baby boy, R. L. B., about one year after operation.

FIG. 3 (Case 2).—Miss E. B. M. before operation for "saddle" nose deformity with an accompanying bilateral nasal obstruction.

FIG. 4 (Case 2).—Miss E. B. M. three months after operation. A piece of cartilage from the left eighth rib was used to reconstruct the nose. The appearance, as well as the nasal obstruction, was relieved.

be severed without loss of a part of it, the many points concerned in the healing of grafted tissues, the best method of preparing whole free-skin grafts, and many other features vital to the present-day success of plastic surgery have been brought about by experimentation.

The grafting of fat is used in depressed scars of the face, especially of the cheeks, forehead, and around the orbit of the eye; also to replace missing tissues of the breast and to fill in defects elsewhere in the body. Bone transplants are used to reconstruct deformities of the head, face, and jaw. Much of this work was done during and since the World War, with the greatest relief to many horribly deformed and mutilated victims. Cartilage is often transplanted in reconstructive plastic work. A very common deformity of the nose occurring in syphilitics, following infection or fractures, is the so-called "saddle" nose deformity. This is best corrected by a transplant of cartilage from one of the ribs. If fat is used in such a depression, it is too soft and will soon absorb or give away. A bone transplant such as that taken from the tibia is naturally accustomed to certain dynamic forces through the phenomena of weight-bearing, and, when placed in such a relatively passive rôle, will partially or completely absorb. Cartilage from a rib approaches nearest the function of cartilage of the nose and, consequently, is the best transplant to use for the "saddle" nose deformity.

Fascia is used for the correction of a drooped eyelid, facial paralysis, and in other conditions where strong and permanent support is needed. As a result of experimentation on animals, Neuhof has shown that fascia transplantation offers a larger field in reparative surgery and a more varied sphere of usefulness than any other form of tissue transplantation. Fascia is easily accessible, is always available in sufficient quantities from the same individual, possesses great strength together with a limited elasticity, tends to heal in place satisfactorily, and is readily adaptable to the shape and contour of all operative fields. The fascia lata of the ox which has been prepared by Koontz, of Baltimore, is a very satisfactory artificial fascia transplant and will frequently save the necessity of removing a strip of fascia lata from the same patient. Since fascia is one of the least highly differentiated tissues of the body, it can be kept for days at a time before it is used, and, when transplanted, almost never dies. Certain fundamental facts concerning all types of tissue transplantation, whether for plastic or other types of surgery, can be drawn from animal experiments. Different animal species do not respond in the same manner to tissue transplants. Generally speaking, the lower the animal the greater the tendency to ideal results. It is even possible for similar species to present greater differences and the higher species to present better results than the lower. A common example of this is found in the fact that skin grafts grow much better in mice than in rabbits. The smaller the graft, the more likely it is to "take." Large transplants may be more successfully implanted by suturing the blood vessels, though this in itself is an accomplishment which is very difficult and sometimes not at all practical. Many small bone or fat fragments give more favorable results than one large piece, unless a solid piece of bone is necessary for its support. A thin, flat transplant will "take" better than a thicker spherical, square, or cylindrical one. These and many other technical and biological facts have to be borne in mind for success in the transplantation of tissue.

The following case reports illustrate certain types of plastic surgery of the face:

Case 1.—Baby boy, R. L. B., white, two months old, was admitted to St. Elizabeth's Hospital with a diagnosis of right congenital unilateral incomplete harelip with a flared deformity of the right nostril (Fig. 1). There was no history of a similar deformity in the family. The general condition of the baby was good, and, under light ether anesthesia, plastic correction of the right harelip and nostril was performed. The baby made a very satisfactory convalescence from the operation and a good result was obtained, as may be seen in Fig. 2, which was taken about one year after operation.

Case 2.—Miss E. B. M., white, age twenty-five, was admitted to St. Elizabeth's Hospital with a "saddle" deformity of the nose which resulted from an injury which she received four months previously (Fig. 3). At the time of the accident, the patient was a student nurse at one of the tuberculosis sanatoriums in Virginia. While on night duty she fainted, striking her nose and sustaining a laceration on the side of her face and a bad fracture of the nose. The wound became infected and part of the nasal septum and nasal cartilages and bones sloughed out. Blood Wassermann and history were both negative for syphilis. In addition to the obstruction on account of lack of proper support to both nasal passages, there was a "saddle" nose deformity. Since the patient had bilateral arrested pulmonary tuberculosis, it was thought inadvisable to give ether as an anesthetic. An operation of this sort can not

be satisfactorily done without general anesthesia. Accordingly, ethylene-oxygen anesthesia was administered through a special mouthpiece after the posterior nares were packed off, and a graft of cartilage was removed from the anterior portion of the left eighth rib. This graft was carved to duplicate a sterile wooden model which had previously been made to accurately fit the nasal defect. The cartilage was then inserted beneath the skin of the nose through a small incision beneath its tip. Fig. 4

FIG. 5 (Case 3).—Mr. W. B. H., age seventy-two, with total blindness in the left eye and a defect following cautery excision of a basal cell cancer of the right inner canthus. The dotted line shows proposed outline of skin flap to be used to cover the defect.

FIG. 6 (Case 3).—Mr. W. B. H., seven and one-half months after operation. There exists no impairment of vision and no deformity of the eyelids or of the underlying lacrymal ducts.

shows the same patient three months after operation with a very decided improvement in her appearance, and normal nasal breathing without obstruction on either side.

CASE 3.—Mr. W. B. H., white, age seventy-two, was admitted to St. Elizabeth's Hospital with a basal cell carcinoma of the nose in the region of the inner canthus of the right eye. Eight years before ad-

FIG. 7 (Case 3).—Mr. W. B. H. after excision of the cauterized tissue and transplantation of the skin flap from the forehead.

FIG. 8 (Case 3).—Mr. W. B. H. after completion of the operation.

mission, a small nevus was noted on the inner right canthus. This began to grow and showed slight evidence of irritation and was incompletely cauterized six years before admission. Since that time the lesion had grown steadily and developed into an indurated ulcer about one and one-half centimeters in diameter. The patient was blind in the left eye from glaucoma, and on account of this it was highly important to preserve all vision possible in the remaining right eye. Because of the malignancy of the lesion, its location close to the right eye, eyelids, and just over the lacrymal ducts, it was imperative to do both a thorough operation and one that would not in any way interfere with the neighboring structures. Under local anesthesia, the cancer was completely removed by dissection with a sharp-pointed electric cautery (Fig. 5). The patient had marked wrinkles on the forehead, both transversely higher

up and longitudinally in the region between the eyebrows and at the base of the nose. Advantage of this redundancy of the skin was taken by outlining a skin flap between the eyebrows with its base on

FIG. 9 (Case 4).—Mr. C. H. R., fifty-nine years of age, with conjunctivitis and scarring of the right eyeball and marked ectropion of the right lower eyelid with contracting scars of the lid and cheek and continuous tear leakage caused by a burn from "caustic."

FIG. 10 (Case 4).—Mr. C. H. R., ten days after operation, showing the graft in place with correction of the contracting scar of eyelid and relief of conjunctivitis. The elevated margins about the graft will in time smooth out and be much less conspicuous.

the nose. The charred margins of the bed of the wound were then cleanly cut away with a scalpel and the flap from the forehead turned into the defect, an important principle which has been developed in the treatment of basal cell carcinoma of the skin by J. Shelton Horsley,[1] and loosely sutured with interrupted sutures (Fig. 7). The margins of the wound from which the flap was taken were thoroughly undermined and this wound was sutured together accurately in a longitudinal manner with interrupted sutures (Fig. 8). The patient made a very satisfactory convalescence from the operation and is shown in Fig. 6, seven and one-half month afterward, with a pleasing cosmetic result, no deformity of the eyelids or lacrymal duct systems, and no change in the vision of the right eye. Incidentally, there had been no recurrence of the malignancy.

CASE 4.—Mr. C. H. R., white, age fifty-nine years, was admitted to St. Elizabeth's Hospital with a deformity of the right lower eyelid and eyeball of seven months' duration. This deformity was produced by a severe, deep burn from "caustic." Examination of the patient showed a conjunctivitis and scarring of the right eye, marked ectropion of the right lower lid, particularly in the inner portion, with a deep, contracting scar of this lid that extended down on to the cheek (Fig. 9). Besides the photophobia and irritation from the conjunctivitis and inability to close this lid, the patient was bothered considerably with the constant "watering" of this eye. He had had three operations elsewhere, with no improvement in his condition. Under ether anesthesia, the heavy contracting scar of the right cheek and lower eyelid was removed and the skin margins undermined in all directions. In this manner

FIG. 11 (Case 4).—Mr. C. H. R., sixteen months after operation, with complete relief of previous symptoms and deformities.

the lower right eyelid was completely mobilized. A small, flattened, oval mold of dental wax was made so as to accurately fit the wound left after excision of the scar and mobilization of the lid. A thick Thiersch graft, about six centimeters square,

FIG. 12 (Case 5).—Miss L. W., age fifteen, with a foul, infected, ulcerated lower lip and extensive hemangioma of the lip and chin and numerous port-wine marks about the cheek, neck, etc.

FIG. 13 (Case 5).—Miss L. W., profile view of Fig. 12.

FIG. 14 (Case 5).—Miss L. W., about two years after operation for condition seen in Figs. 12 and 13. It was necessary to remove the entire lower lip and most of the chin. This defect was corrected in two stages by shifting lateral flaps from the cheeks, rebuilding a mucous membrane lining.

was cut from the anterior surface of the right thigh of the same patient. This graft was sutured over the dental wax mold with interrupted linen sutures, with the external skin surface next to the mold.

FIG. 15 (Case 6).—Baby boy, R. A. B., age twenty-one months, with a large elevated and infiltrated hemangioma of the right cheek which could not be satisfactorily treated by radium or x-ray.

FIG. 16 (Case 6).—Baby boy, R. A. B., two and one-half years after operation. There has been no return of the hemangioma and there is no deformity of the mouth, nostril, or eyelids adjacent to the operative area.

The graft with the mold was then placed into the wound and sutured securely with interrupted sutures of linen. The wound in the right eyelid and cheek was covered with sterile vaseline and that on the right thigh dressed in the customary manner. About a week after operation the sutures and wax mold

were removed and the patient was discharged about ten days after operation with a very satisfactory result in that the conjunctivitis had disappeared, the deformity of the eyelid was corrected, the lids could be closed, and the previous continuous "watering" of the eye was relieved. Fig. 10 shows the condition of the wound and eyelid just previous to discharge from the hospital. The elevated, conspicuous margins of the wound will eventually smooth out and given even further relaxation to the eyelid. The patient has been followed at intervals since leaving the hospital and a photograph taken sixteen months after the operation is shown in Fig. 11 The patient states that he is very well pleased with his present condition and that the irritation of the eye and his previous complaints have been completely relieved.

CASE 5.—Miss L. W., white, age fifteen years, was admitted to St. Elizabeth's Hospital with a foul, infected, ulcerated lower lip and an extensive hemangioma of the lower lip and chin with deep port-wine marks extending on to both cheeks, neck, and chest (Figs. 12 and 13). This case illustrates two points very often seen by the plastic surgeon in birthmark cases. The first point is that the family, as well as the family doctor, failed to recognize the seriousness of the hemangioma which was present at birth in a very mild and easily controllable state, and, consequently, the failure to give early treatment. The second point is insufficient and improper treatment. In addition to the ulcerated and infected hemangioma of the lower lip and cheek, there was also present definite evidence of burns from radium and x-ray irradiation. Under local anesthesia the entire lower lip and portion of the chin was excised well down over the mandible. Lateral flaps from the lower cheeks were then fashioned and the chin and lower portion of the lower lip reconstructed. The patient made a very satisfactory convalescence from this operation. The results at this stage were not complete, however, because the defect left after removal of the lower lip and portion of the chin was so great that a complete reconstruction could not be done at one stage. She was discharged from the hospital about two weeks from the time of her first operation and reported again in two months for further reconstructive work on the lower lip. On the second admission, the lip had healed very satisfactorily and the inflammation had entirely subsided. The artificial muco-cutaneous line and mucous membrane of the lower lip were in excellent condition and in good apposition. The lip sagged in a curved manner in the central part. The sagging was about one centimeter more than normal at its lowest point. A plastic operation along the line of Hunt's modification of Blasius' method, shifting lateral flaps up to fill in the curved defect was performed. The patient was discharged ten days after this operation with a very satisfactory result. She has also been carefully followed since operation, and her condition two years after the last operation is shown in Fig. 14. She has shown no further evidence of infection or radiation burns and no return of the hemangioma. The lip is naturally shortened, though, considering the tremendous deformity that was necessary following a complete operation, the results are quite good, as she can shut the lips normally and has good control of the lower lip.

CASE 6.—Baby boy, R. A. B., white, age twenty-one months, was referred to me at St. Elizabeth's Hospital by the röntgenologist. The baby had a hemangioma of the right cheek in a very conspicuous part (Fig. 15). This hemangioma was raised, oblong, of the infiltrating type, and measured about three by one and one-half centimeters. The röntgenologist stated that the growth was too extensive and deep, and also in too conspicuous a location to get satisfactory cosmetic results by either radium or x-ray therapy, consequently, under ether anesthesia, the baby was operated upon and the hemangioma was completely excised by incisions parallel to and close to the border of the growth. A narrow margin of normal tissue, however, was removed with the growth so as to insure no recurrence. The skin margins were thoroughly undermined in all directions and two transverse incisions were made across the cheek laterally, each about four centimeters in length. This oblong area of skin thus outlined was undermined back to its base and slipped forward, thus correcting the defect. The skin margins were approximated with numerous interrupted fine sutures of s. w. g. and horsehair. A firm iodoform gauze and sea sponge dressing was applied. The baby made a satisfactory convalescence from the operation and was discharged from the hospital about ten days after operation. There are four very important and interesting points represented in this case: First, the lack of early recognition of the condition and lack of proper treatment by the family and family physician. This lesion first occurred as a very small one on the right cheek a few days after birth. Second, recognition by the röntgenologist that radiation therapy would produce a poor cosmetic result. Third, the

necessity of completely removing the hemangioma at the time of operation, regardless of the type of defect that would be left. Fourth, closing the wound left after removal of the hemangioma in a manner so that there would be no tension on the right lower eyelid, right nostril, or upper lip. The final result in the little patient may be seen in Fig. 16, which shows a pleasing cosmetic result with no pulling up of the corner of the mouth or pulling down of the right eyelid or lateral pulling of the nostril. Incidentally, there has been no recurrence of the original growth.

REFERENCE

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INJURIES TO, AND DISPLACEMENT OF, THE INTERNAL SEMILUNAR CARTILAGE OF THE KNEE *

By WARD WYLIE, M.D.
Princeton, W. Va.

In undertaking to write a paper on a subject of this nature it is necessary to cover much that has already been written. This paper will be little more than a review of the literature; but, in view of the fact that our work is more along industrial lines, and that this is a condition often undiagnosed or overlooked, I feel justified in choosing this subject.

In injuries of the knee joint, the internal meniscus (internal semilunar cartilage) is far more commonly injured than the external. Sir Robert Jones' experience has taught us that injury to the external semilunar cartilage does not constitute more than eight per cent of the total number of cases. This is due to the fact that the internal cartilage is more firmly fixed and is not allowed to give and take movements vouchsafed the external, and, in addition, it bears a greater strain during the normal movements of the joint. In the standing position, the body weight falls through the inner side of the knee joint. The shape of the internal articular surface of the tibia allows the internal condyle of the femur to glide backwards on the tibia, the range of internal rotation of the femur on the tibia, which movement causes a direct strain on the semilunar, is thus greater than that of external rotation.

A study of the anatomy of the knee joint in flexion after removal of the articular capsule and the lateral ligaments will give one a fair idea of the relationship of the various cartilages and the way in which they may be injured. While the usual cause of the cartilage lesion is strain thrown on the internal lateral ligaments when the knee is flexed and the femur rotates inwards on the fixed tibia, in rare cases the displacements may occur while the knee is fully extended. A wrench or forcible twist of the tibia on the femur whilst crouching with the knees bent tends to produce a tearing of the semilunar cartilage. For this reason, injury to the semilunar cartilage is frequent among colliers working with flexed knees in low seams in the mines.

In practically all cases the cartilage is displaced inward, and in those rare cases where a protrusion has been felt from the outside it is due either to bruising and hemorrhage or to a buckling of the cartilage, which gives an irregular feel to the articular margin. By a study of the anatomy, and taking into consideration the wedge shape of the discs, it will be seen that a displacement outward could not possibly produce a locking of the joint, which is a symptom absent in thirty per cent of about 2,000 cases operated upon by Sir Robert Jones. The cartilage, being wedge-shaped, acts as a foreign body and becomes jammed between the articulating bones, giving rise to the acuteness and painfulness of the attack.

The most constant symptoms of a displaced or fractured semilunar cartilage is a sudden inability to extend the joint. The locking comes on immediately as a rule at the time of injury, but less frequently no such locking occurs at the onset. Sometimes there is a sensation at the time of injury as of something slipping in the joint but without any locking. Here the cartilage has probably beben bruised and has slipped back into place. Great force is generally necessary to cause an original injury which is accompanied by great pain. A man may be carrying a heavy load or participating in an athletic contest and in some manner have his foot stabilized, the knee slightly flexed, and a superincumbent weight thrust upon him, which will rotate the femur inwards, causing the cartilage to be displaced and the man to fall to the ground with a cry or exclamation of pain. When he tries to arise or is helped to his feet he finds that he can not straighten his leg, and the putting of any weight on the foot is very painful. The leg can be voluntarily flexed, but any attempt to extend the knee to an angle less than 30% from straight is impossible.

Injury of the internal semilunar cartilage is diagnosed by the (1) acuteness of its onset; (2) syno-

* Read before the Mercer County Medical Society at Matoaka, West Virginia, on November 19, 1929

vitis; (3) persistence of pain over injured area known as "diagnostic point"; (4) locking of the joint; (5) abduction of limb at knee is painful; (6) forced extension of knee is very painful; (7) irregular feel at articular margin due to hemorrhage, bruising or buckling of cartilage. It is differentiated from osteoma by manipulation and radiography. Loose bodies can generally be found by the patient. If they cause locking of the knee it is usually only transitory. The symptoms are sharp but not acute. Effusion in this condition is common. Lipomas cause swelling; exercise rather than accident produces the symptoms, which are rarely acute. Pressure on the knee causes no pain.

Injury to synovial fringes may be confounded with injury to the semilunar cartilages, but the symptoms of the nipping of a synovial fringe are less acute in its primary occurrences than those of a displaced cartilage, and the pain is strictly local and not participated in by the internal lateral ligament. Frequently a prominence may be found over the site of pain, and no matter how often the nipping occurs, effusions follow, creaking in the joints is common, and often an obvious swelling occurs on each side of the ligamentum patellæ.

It is well to remember that the symptoms of injury to the semilunar cartilage may be marked by the general trauma received at the time of the injury to the cartilage.

Injuries to the external semilunar cartilages are so rare that the symptoms will not be discussed here.

Treatment.—This is mechanical or operative. It is difficult to decide whether a knee should be operated upon or treated mechanically. So large a proportion of cases make a good recovery under mechanical treatment that an operation should be discouraged if a patient is seen at once with a first displacement; nor should an operation be urged when a recurrent trouble is painless and is not followed by effusion into the joint. An operation should be urged when the recurrence is sometimes followed by acute symptoms and in all cases where a strenuous athletic life is a means of livelihood or a physical necessity. Operation should be urged in the case of men who work or stand in a position where a yielding knee may mean disaster. An argument in favor of operation is the undoubted fact that degenerative changes are likely to occur in joints as a result of these derangements, causing a chronic arthritis or probably an ankylosed joint. An operation is indicated when it is evident that the knee will never be straight, due to the extensive injury of the cartilage which prohibits the knee from being voluntarily in complete extension.

In mechanical treatment these things must be remembered: Reduction must be absolute, all movements of the cartilage must be prohibited until union of torn structures is complete, and no lateral strain should be allowed until the internal lateral ligament has recovered its tone.

No reduction is complete until the knee can voluntarily be held in complete extension. In the majority of instances reduction is easy, but in some old cases it may be very difficult. For an internal cartilage, acute flexion, lateral deviation, internal rotation and full extension is the routine manipulation. If an anesthetic is not used, the patient may assist in the reduction. The surgeon fully flexes the knee and rotates it inward on the femur, and then, at the count of three, the patient is told to kick as powerfully as he can, while the surgeon helps by pressing down on the thigh and upward on the leg. In this manner the patient helps instead of hindering the reduction. Often it is possible to reduce a displacement of many weeks' standing under an anesthetic. When reduction is brought about in recent cases, the limb should be fixed by means of a posterior splint to allow the cartilage to become attached. If this is done in a recent first displacement, recurrence seldom happens. If massage and movements are used, however, it is the beginning of trouble. On resuming activities the patient should be taught to save his internal lateral ligament from strain. He should walk with inturned or parallel feet, aided by altered shoes raised on the inside of the heel one-fourth of an inch and the inner side of the sole fortified by a similar wedge of leather. When the patient stands in such a shoe, the lateral strain which is needed to displace the cartilage is avoided. The patient may also be taught to be pigeon-toed and to walk with an inturned toe, which will serve to relieve the strain on the internal lateral ligament. In addition to the above treatment, a cage splint must be employed. The cage support consists of two flat pieces of steel, twelve by thirteen inches long for an adult, which are molded to lie on each side of the knee joint with a joint in the center of each. These steel stems are connected at their upper and lower ends by a band of steel which fits exactly to the back of the thigh and calf. The whole framework is covered with leather. Two intermediate leather bands support the limb, one above and one below the hinge, and secure the cage to the leg. Joint movement may be limited to any

degree by a stop fitted to the joint. During the whole course of the treatment the quadriceps, and especially the vastus internus, should be developed by active resistive exercises and massage. A pressure bandage may have to be applied to prevent effusion after the cast has been removed, and in some cases paracentesis may have to be done to relieve intra-articular tension.

Operative Treatment.—The knee joint should never be opened except under the most scrupulously aseptic conditions. Careful local preparation of the skin is required, which is best secured by two ward preparations, 24 and 12 hours prior to the operation, and at the end of each the field of operation should be covered with sterile bindings. The first preparation should thoroughly cleanse the part and the second should supplement the first one and should produce a dehydration of the skin. The limb is shaved half-way down the leg and half-way up the thigh, thoroughly washed with soap and water and followed by alcohol. The field is thoroughly rubbed with a spirituous solution of bichloride of mercury and sterile bandage applied.

At the operation a tourniquet is applied to the thigh, and the leg to be operated upon is flexed over the end of the table. The other leg is allowed to hang over the side of the table and is tied there so as to be out of the way of the operator. The affected foot and leg should be covered in by a separate towel, which should be closely wrapped around the limb. This should be outside the other sterile draperies. This point is important in case the surgeon wishes to have the foot and leg rotated during the operation. The field of operation is painted with a 3% solution of picric acid in alcohol or with tincture of iodine.

The knee is flexed to a right angle. A curved incision is made two inches in length. The incision which involves the skin begins only one-fourth of an inch internal to the inner edge of the patella at its center. The cut curves downwards and backwards for one inch until it reaches the level of the joint, and for the remaining inch it runs parallel to the upper articular surface of the tibia. Small wound towels are now clipped to the edge of the wound, and these should shut off all the field of operation not previously covered in. The skin knife is discarded to prevent any likelihood of infection from the skin. With a fresh knife the lateral patellar ligament is divided by a similar incision to that described for the skin. Great care is required not to prolong the incision posteriorly far enough to endanger the anterior fibres of the internal lateral ligament. The joint is opened and two small retractors separate the line of incision into the synovial membrane. A blunt hook can now be slipped under the free margin of the cartilage and it can easily be seen whether the front part is detached or split or has tags or projections liable to cause disability. If there is a definite lesion in the front part of the cartilage, it is sufficient to remove the anterior half of the meniscus. In case there is no definite lesion to be seen in the anterior portion, the whole of the cartilage should be removed. The anterior horn should be detached, and this should be impaled with a sharp hook. The circumferential attachments of the cartilage should now be divided with a sharp knife slightly hooked, traction being applied by means of the hook. The separation of the posterior portion of the cartilage may be facilitated by rotating the leg outward. In removing the cartilage, care should be taken that no tags liable to cause subsequent trouble are left projecting from the coronary ligaments.

The capsule and lateral patellar ligament should be carefully sutured in two layers by means of fine catgut, the skin being sutured without drainage. The dressings are applied to the knee while flexed and the limb is extended to enable one to apply the sterile bandage. A certain amount of elastic pressure is applied to the joint by means of bandaging over large pads of cotton. The tourniquet is now removed.

The knee is kept fixed in a posterior splint at an angle of ten degrees of flexion for a period of ten days before the stitches are removed.

After this, the patient is allowed to walk about with the knee still flexed on the splint at the same angle for a further period of ten days.

The back splint is then removed and a bandage is applied firmly around the knee joint up to but not extending above the upper border of the batella.

Massage of the thigh, particularly of the quadriceps, is now freely employed, with application of heat to the joint, and the patient is encouraged to use the knee freely.

No passive movements are required at any time.

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HYPERTENSION *

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Hypertension is a phenomenon of disturbed physiology and is no more a pathological entity than a clinical one. Nevertheless, among some pathologists, at present, it is a question whether hypertension is a disease in itself or not; but we, as clinicians, look upon it as a sign and not as a distinct disease, although it is often the chief factor of the syndrome. Which of these attitudes is more nearly correct will not be discussed in this paper, as there is not enough agreement of opinion to look upon it as a disease entity with any assurance. We discuss here three types of clinical hypertension: First, primary or essential hypertension; second, secondary or symptomatic hypertension; and, third, functional or vasomotor hypertension. We should like to stress the fact that this is a clinical discussion, and as such the classification offered seems justified.

As a background for this paper a study has been made of ninety cases of hypertension and averages noted. There were fourteen cases of primary hypertension in which the age factor was about forty-two. There were seventy cases of secondary hypertension of which chronic nephritis was the cause in twenty-nine cases, and of these the average age was thirty-one. There were eleven classed as cardiac, of which the age average was fifty-one. There were thirty cases of arteriosclerosis, including three cases of diabetes and one of alcoholism, of which the age average was fifty-nine. There were six cases of functional hypertension, including cases of hyperthyroidism, pregnancy, and fatigue, in which the average age was thirty-five. It will be noted that the essential hypertension and the nephritic type of secondary hypertension occur in the young, whereas cardiac and arteriosclerotic hypertension occur after fifty years of age; and, further, that in functional hypertension the age average is also young.

1. *Primary or Essential Hypertension.*—Arthur R. Elliott, of Chicago, in his article on "Essential Hypertension," published three years ago in the *American Journal of Medical Science*, speaks of arterial hypertension as constituting one of the most puzzling and controversial problems. He says, further, that in the present state of our knowledge one thing, and one only, stands out clearly as beyond question of importance in the etiology of high blood-pressure. He refers to the influence of heredity and believes it is one cause about which we need not argue. The relationship is clear. Among many of the best clinicians and writers, at present, "essential hypertension" is applied to cases where there are definite pathologic changes or lesions present, particularly those pathologic manifestations belonging to the nephritis group. However, our ideas concerning essential hypertension are not in accord with these opinions. We look upon essential hypertension as congenital; arteriosclerosis, or, better, arteriosclerosis of small vessels; a defective blood vascular system occurring in the young and characterized by the presence of normal kidney function, normal heart, normal blood chemistry, and with no evidence of disease which can be demonstrated in the patient, aside from hypertension. This type is exceedingly uncommon, but is, however, met by most men of wide clinical experience. It is possibly the most unfortunate, for the individual, of all the types with which we come in contact. To illustrate, we have seen in consultation a young man, 26 years of age, with no history of scarlet fever, diphtheria or other infections, of a slender, non-athletic make-up, whose serologic findings and kidney function tests showed no abnormality and in whom there was no syndrome of complaint, except possibly easy fatigability. He had a persistent systolic pressure of over 180 mm. of mercury and over 130 diastolic. From physical examination, his larger peripheral vessels were not apparently sclerotic; the heart was not enlarged, and there were no symptoms consistent with hypertension. To manage this type of patient is exceedingly difficult. Medicine plays no part in the treatment. The patient's whole mode of life should be one of suitable environment, occupation, and social restrictions. Fortunately, this young man's parents were well to do and he was advised to live at the seashore. He was further advised to secure a clerical position of some kind and to avoid the ordinarily attractive athletic and social phases of young people's lives, with the hope that he might carry on to middle life.

A nurse, 30 years old, in the hospital where we work has a blood-pressure of 190/120 and with no other demonstrable findings. Her only complaint is headache. There is a boy, 17 years of age, in the ward at Mercy Hospital with a blood-pressure of 170/100, who shows no other symptom of disease besides an enlarged heart. These are the cases of hypertension which the writer insists should be called essential or primary hypertension, looking upon it as

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a congenital cardiovascular defect and having nothing to do with pathological damage. Ultimately, pathological changes may and will occur.

Herman Mosenthal, in discussing the treatment of essential hypertension before the American Medical Association a year ago, stated that the most important dietary restrictions are those in relation to fats and carbohydrates (the main sources of obesity), and the greatest danger to the hypertensive patient is cardiac failure, which is particularly stressed in the obese.

2. *Secondary or Symptomatic Hypertension.*—Under this group, the hypertension is certainly not a disease, but is only the manifestation of some damaging pathologic process which has probably anticipate it and caused it. This group includes hypertension in nephritis, in syphilis, in arteriosclerosis, in diabetes and in senility. This gives by far the largest group of hypertensive cardiovascular manifestations. They are all the result of previous disease; they are usually permanent; are little influenced by therapy, and usually end in cerebral hemorrhage, coronary sclerosis, uremia, diabetic gangrene, or the quiet passing of old age in coma. In this group the nephridides play the largest part. In nephritis, hypertension is only one sign of kidney changes and requires clinical phenomena to establish the diagnosis. Here we have the anemia common to nephritis, the enlarged heart, the gross and microscopical findings in the urine, the changes in the eyegrounds and nitrogenous retention in the blood, which all fit into the picture of a nephritis of which the outstanding clinical sign is the high systolic and high diastolic pressures. The termination commonly found among these cases is either that of cerebral hemorrhage or uremia. The former is the usual one in patients past middle life, but the latter is more common among the younger. However, uremia, as we understand it today, in the types of nephritis where hypertension is a factor, is not nearly so common as is generally supposed. Here, of course, the management and treatment is directed more to the disease itself than to the hypertension, although the hypertension is the dangerous sign—indeed, is the usual factor in the termination of the disease. One might pause here for a moment to call attention to the erroneous cause of death attributed to some of these cases, even by the attending physician, where the death is sudden. It is well to remind ourselves that cerebral hemorrhage is almost never the cause of sudden death, although it is frequently stated to be such. It is true that, if one had a large cerebral hemorrhage which at the time broke into the ventricles, one might die in a few moments; but, as is well known, this is not the usual occurrence. One gets a chance to do something for these patients and not infrequently prolongs their lives. We have at present under our care a young man, the same age as the one reported upon above, who has marked secondary anemia, a systolic pressure of 190 over a diastolic of 140; marked hemorrhagic retinitis; gross urinary findings—many cases, particularly granular; a high nitrogen retention (76 mg. per 100 c.c.); blood creatinine of 2.5 mg., but with no edema. His expectancy of life, from our point of view, is that of a few weeks or months. However, there is no edema and he would formerly have been classed as a case of interstitial nephritis, which, as you who are older will recall, is said never to occur in the young. This man is clinically classified as a chronic nephritic without edema and with hypertension. Environment, rest, food, sweating, salines and diuretics will avail this man nothing at all. There is no hope of recovery Frequent mild infections in childhood often are a cause of nephritis.

Syphilitic vascular involvement, the next important disease in producing the syndrome of hypertension, while affecting the aorta, does, in spite of certain claims to the contrary, affect the valves, especially the aortic, often producing organic aortic insufficiency. This occurs more frequently in the negro than in the white race, producing a picture of hypertension resistant to antisyphilitic therapy, with a bad prognosis and that fairly imminent. Those of you who are familiar with Scott's work at Cleveland will, I think, appreciate this statement. While the gross manifestation of this disease is in the aorta, producing aortitis and even aneurysm with relative stretching of the aortic ring, it does produce also real valvular changes which tend to raise the systolic pressure with marked lowering of the diastolic pressure, and is of marked clinical significance.

General arteriosclerosis, in which neither nephritis nor syphilis is an outstanding cause, also is first manifested by hypertension, and it is in this group of cases that probably the most important and attractive syndrome and disease has presented itself in recent years. We refer to the disease known as coronary sclerosis. It has only been within the last few years that differentiation from angina pectoris has been noted. We look upon this at present as a distinct entity, and, while occasionally occurring with a normal blood-pressure, is usually associated with hypertension. It is quite a common disease; at least, in recent years it has frequently appeared

in our hospital records. While sometimes confusing, it is usually easy for most men of clinical experience to recognize it, if they bear it in mind, for it presents a very definite syndrome. This is the disease which the newspapers call "acute indigestion," and to which some of our colleagues are foolish enough to subscribe. So-called "acute indigestion" kills nobody, for there is no such disease. Coronary thrombosis is manifested by a fairly clear syndrome and definite signs, as follows: epigastric pain, severe and persistent in character, sometimes confused with perforated peptic ulcer, sometimes with radiation analogous to angina pectoris; definite drop in systolic pressure, followed by rise in temperature; increased leucocytes. When it is possible for an electrocardiogram to be made, it shows a very definite slurring of the Q. R. S. complex. This is one disease in which the electrocardiogram often tells the tale. If, in addition, one has a demonstrable pericarditis with signs of failure following after a brief period, the diagnosis is complete. Many of these patients recover after long periods of rest, become clinically well, and are returned to their occupations. In the *American Journal of Medical Sciences* for October, 1929, reports of such cases can be found, and these are entirely consistent with our own experience, of which we have a large number on record. The pathological lesion present is that of coronary sclerosis. Coronary thrombosis, with intramural infarcts, occurs. Syphilis rarely plays a part in this damage, and the cause is generally looked upon as due to the stress and strain of life. We recently had under our care a negro physician, 48 years of age, who presented this picture of disease in its entirety with the only exception that he had no evidence of pericarditis. Under opiates and rest he has made a complete recovery and is able to resume his duties.

Hypertension due to diabetes or, if you prefer, associated with diabetes, is found not uncommonly, particularly in the obese patient, while the serious peripheral complications of diabetes are associated with arteriosclerosis, involving particularly the dorsalis pedis artery and producing the gangrene which so frequently is seen. It is true that usually there is some wound or excoriation of the toes to precipitate the gangrene, and this is the reason, as you well know, that Joslin stresses so much the daily care of the feet in all diabetics. Whether this can be traced to the arteriosclerosis, which is associated with or has anticipated the diabetic manifestation, might be questioned; but it is more likely that the sclerosed vessels, particularly those supplying the pancreas, may be the primary factor. Most of our experience has been that the hypertension is present at the time the diabetes is recognized. Senility, while possibly an etiologic factor in hypertension, is more likely to be associated with atheroma rather than arteriosclerosis. This is the type of aged patient who has prominent beady arteries, readily recognized, but not tortuous, and not infrequently a normal or somewhat lower pressure as read by the blood-pressure instrument. When, however, hypertension is present in this group of people, it needs no treatment and stands no meddling.

3. *Functional or Vasomotor Hypertension.*—This is seen in the so-called functional hypertension occurring at the menopause, generally spoken of as the Reisman type, and in younger patients suffering from hyperthyroidism. Here, while the systolic pressure is high, the diastolic is low. There is only one problem in regard to this group, but from our point of view it is very urgent. It occurs in later life and sometimes shows very high systolic readings. There is a very simple way of solving the problem of these patients. Their pressures should be taken two or three times at short intervals and when free from emotional disturbances, as far as possible; but, best of all, the blood and urine chemistry should be carefully studied for nitrogen retention and for phthalein output. Should these be within normal range, as is usually so, the hypertension is disregarded and assurance can be given that, after the climacteric period, the systolic and diastolic pressures will be returned to normal and no problem of impaired health will call for either treatment or management. Our attention was called to this a few years ago by Reisman of Philadelphia and has since been a comfort both to the attending physician and to the patient. This is the type of patient in which blood-pressure readings should not be too frequent and whose figures should rarely be told to the patient. With all that has been said before, particularly of the symptomatic group of hypertension, there should always be kept in mind the possibility and even the probability of toxic factors from local foci, gastrointestinal deficiencies, stress of life and endocrin factors, the phase of belief on the part of the patient that these so-called factors anticipate and even produce hypertension, followed by local damage to the kidney, heart and blood vascular system may indeed aggravate the condition.

Complications of hypertension, alone, may well bear repeating. The commonest one, of course, is cerebral accident in the form of hemorrhage from

increased pressure in the poorly supported arteries of the brain; coronary thrombosis, occurring in one branch of the coronary artery, producing the disease known as coronary thrombosis; and uremia, with changes in the kidney and alteration in its functions. The last is the rarest of the three mentioned.

In regard to treatment, it is directed either toward the immediate relief of the hypertension or its hope of relief with treatment directed toward the organs which show the greatest pathological lesions. Most remedies applied for hypertension for its immediate relief are very transient and used for the prevention of cerebral accident or uremia. There is possibly one exception to this in our own experience, and that is that a very small percentage of hypertensive cases, no matter what the etiology, get temporary and sometimes lasting relief by the use of small doses of iodide. While, as stated, this percentage is small, it is worth a trial and is advocated. Other procedures that produce temporary relief are the administration of nitrites, potassium sulphocyonate, bromides, purgatives, diuretics, and venisection. Of these, at present the most popular is the potassium sulphocyonate, of which Porter, Silver, and White have recently reported upon fifty-some cases and Schleiter at the University of Pittsburgh on more than twenty cases. The last-named writer stated, in the summary of his cases, that while the systolic pressure was considerably reduced, it was possibly only transient, but all his patients reported feeling very much better and being free from annoying symptoms. Probably the best method of all, though, is venisection, frequently repeated if need be, and, when possible, accurately controlled. For the last two years one of our assistants has carefully measured all hypertensive cases, and when the sphygmomanometer showed a venous pressure of over 11 cm. of water, venisection has been done. By this method we have an accurate measurement and the results have been very much better than by the old methods of physical diagnosis. The other problems are largely met by general management, dietetic restrictions, and the frequent use of salines; but, best of all, when possible, by a restricted and well-ordered life.

In regard to the problem of salt and protein restrictions in these cases, which we have practiced so assiduously for some years, with our salt-free diets and with the interdiction of proteins, we seem to have been satisfied that these were our mainstay in regard to diet therapy. We must feel now that these two food factors have probably been erroneously used and with insufficient analyses to warrant such restrictions. Many recent observers in clinical medicine believe that the problem of sodium chloride in the blood, up to 5 gm. per 100 c.c., influences hypertension not at all; particularly is this true where no edema is present. Proteins are immediately restricted, when the family physician finds some hypertension and some albumin in the urine. In this way protein deficiency has done much harm by eliminating very necessary factors of food to maintain proper nitrogen balance in the blood. No patient with hypertension and gross findings in the urine should have his proteins even reduced unless his blood chemistry shows a high nitrogen retention—that is, beyond 40 mg. per 100 c.c. of blood or above 20 mg. per 100 c.c. of urea nitrogen.

In conclusion, we have tried to present a reasonable clinical classification of hypertension only. First, to define what, to us, is primary or essential hypertension, together with what pathological lesions might follow; second, to state that secondary or symptomatic hypertension is a sign only of pathological lesions elsewhere; and, third, our belief that functional or vasomotor hypertension is of little significance.

REMARKS ON THE TREATMENT OF COMPOUND FRACTURES *

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The problems of bone surgery have exercised the minds of medical men, more especially the surgeons, for many generations. In the pre-abdominal era, surgical lesions of the bone occupied a rather conspicuous place in the surgical emergencies of the day, and probably such conditions were treated with as great success as is attained on the average at the present time. During the past third of a century bone surgery has considerably lost its precedence, due, mainly, to the change in surgical perspective caused by the abdominal revolution. The lure of, and the easy, dramatic way to reach, the public eye and ear has served to overshadow and relegate bone disease and other commonplace surgical conditions to the background. Times have changed, however, and a new and better field has opened up for the young enthusiast in, I may say, the birth of industrial surgery. For a number of years it was a noticeable fact that almost all articles found in medical journals on fractures mentioned the lamentably unsatisfactory

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results obtained by the present methods of treatment. The war aroused new interest, and industrial surgery has been stimulated by workmen's compensation to the development of a new era, and bone surgery is coming back into its own place.

Such educators as Sherman, Magnuson, Osgood, Miller of North Carolina, Orr, and many others, both in this country and abroad, whose names are widely known but too numerous to mention, have done work of inestimable value and yielded a large influence toward the development of centers of education. Industrial clinics are found at numerous hospitals in this country and abroad. Post-graduate courses may be attended—the one perhaps most widely known is that at Boston (Mass.) General Hospital, sponsored by the Harvard Medical School and held for one week once a year. Short, it is true, but strenuous and most enlightening. I would recommend it to all who do not think they know all about fractures. It is comforting to see men with hoary heads, like my own, sitting all day long, trying to absorb the new and ever-interesting truths.

Orthopedic hospitals are being built by different states, open to all for education in the art of reclaiming cripples, especially crippled children. One has but to stop and think to see that the lure of the dramatic route is losing its enticement to that of orthopedics, and today the treatment of fractures is taking first rank in the surgical arena; and the compound being the most serious type of fracture, I have chosen it as the subject of these remarks. I shall lay special stress upon the Orr method, the same principle he applies to osteomyelitis, because it is founded upon the fundamental fact all know but too many have forgotten: Nature alone heals! We are only her agents and guardians of her rights while she performs her work—her miracles.

The wheels of industry and the fast increasing number of rapid-moving motor-cars contribute no small opportunity for the practice of the art of traumatic surgery. Your services required in general may diminish, but the building of hard-surfaced roads and increasing supply of bootleg liquor will furnish more accidents as the years roll by than you have had an opportunity to witness in the past, and it is by actual experience and responsibility alone that we actually learn. When first called to attend a fracture, one should look for blood, and, if present, ascertain if it escapes from a wound leading directly or indirectly to the bone. If positive, from that moment our real responsibility begins, and ends only when the patient reaches the hospital, actual or improvised. I have treated many in the olden days without hospital convenience, and, I may humbly add, without further contamination or complication. If time and space permitted, I might recall some of my early experiences during those crude days of the early 'nineties, as I was in a new field in a new country. A little might be learned by comparison; but I must hasten on toward the discussion of this absorbing subject.

Having assumed the responsibility of a compound fracture, think of iodine and sterile gauze, to be placed quickly over the bleeding part. If accompanied by hemorrhage, a compress over this, or even a tourniquet—but never a tourniquet unless it is absolutely needed. If used, be sure of two things: first, that it is tight enough to control the arterial hemorrhage and not just tight enough to increase the venous, as I have often seen done, especially when a layman renders first aid; and, second, do not apply it too tightly or too long. I might say, in passing, that a compound fracture does not require a tourniquet in a large percentage of cases, as large vessels seldom bleed to excess when torn, and oozing from the smaller ones, and especially the blood from veins, can be controlled by elevation and slight compression over them. A splint might be used. A Thomas splint should adorn every surgical armamentarium. They should be plentiful at every point of frequent accident, but, in lieu of a Thomas splint, some other rigid substance, padded and placed along the limb which has been broken, may be substituted. No effort should be made at setting, but "splint 'em as they lie." The patient should be transported with gentleness and care to the nearest safe point for prompt adjustment of the fragments and permanent fixation at the very earliest moment possible. The x-ray is always indispensable for essential information not otherwise obtainable. A careful history should be secured as to the nature of the instrument or mechanical agent which produced the traumatism, and also at what angle the contact was made. In short, one should know practically all that can be learned about so serious an injury as a compound fracture, especially where we most usually encounter them—in the long bones. An estimate should be made, also, as to the amount of laceration and other trauma of the soft parts (which have such determining influence upon bone union in future), and resistance to the bacteria always present, for comit is conceded that compound fractures are potentially infected. One should also note the blood supply, and never fail to test out the motions for dis-

covery of nerve injury in all fractures. Failure to do this, especially in injuries to the upper extremities, will occasionally prove the source of no little embarrassment.

For convenience of discussion, all compound fractures of the limbs should be divided into two classes: First, those that have been made compound by the fragments of the bone (that is, punctured from within), and, second, those whoch have been produced in the opposite manner, as from a missile or broken glass or some other force that has broken the skin and other soft parts. Every compound fracture must be considered as infected and should be dealt with accordingly, but the first-named class is much less so than is the last. The first is usually associated with lesser injury to soft parts and is also more quickly converted into a simple fracture. The last necessarily requires very different management, as well as primary care or operation, as will be described later.

While we are pleased to see compound fractures convert themselves (I say "convert themselves" advisedly) into simple fractures, we no longer hesitate to convert a closed fracture into a compound whenever necessary on account of interposition of muscle or other obstruction to adjustment of the otherwise irreducible fragments. Of course, in these one disclaims potentiality of infection, although on rare occasions disappointment ensues and then one has to deal with infective osteomyelitis and must handle it just as he had had to handle other cases of osteomyelitis that were not engendered through the wound created by the surgeon himself.

Seldom, indeed, does this tragedy make its appearance in the hands of an experienced general surgeon or orthopedist, and one case should not give him "cold feet," for very often a case can not be otherwise managed than by open operation. May I not be misunderstood: While I welcome a good excuse for open operation in some cases, especially a bad one of the femur, I do not advocate or practice open operation of a simple or closed fracture in any case that promises any kind of satisfactory anatomical o functional result without such operation.

Conservatism in surgery is not always the safest way, but it is usually the one most fair to the patient. I wish not to be misunderstood in the use of the word *conservatism*. I mean it to apply to the present-day acceptance of the term as applying to surgical operations, and not as that of conservatism a decade or two ago. Conservatism, as applied to treatment of compound fractures, means to keep the fingers out. Radicalism spells debridement. Now, there are cases when it is best not to leave all of the work to nature, or dissolving and separating macerated tissue, or of casting out an unwelcome offspring which has renounced attachment to his parents, the periosteum and the mother bone, but do not practice general debridement to any appreciable extent in the usual run of cases, for the chief reason that I have not found it at all necessary as practiced, according to my understanding, in the World War, where the word got its new birth. And, too, I find it most difficult—I may say impossible—to determine what muscle, tendon, fascia, cellular tissue, and, now and then, bloodvessels and nerves, and even, on rare occasions, the skin itself, are doomed to death, and what, if left to the hand of nature, may not live and prosper.

There is much to be said both for and against debridement, but its employment must be backed by good commonsense, judgment and experience or it will prove destructive rather than salutary. Given a case of compound fracture of the first variety mentioned, where the force has come from within outward, bone sometimes protruding to a greater or desser distance, often covered with dirt, coal dust, or hugged by soiled clothing, the bone is first freed of these with dry gauze and painted with 10% tincture of iodine, then gently replaced by traction on the limb, enlarging the wound if necessary for easy return; then, with a glass syringe, tincture of iodine is injected into the wound freely and with pressure, if the wound in the skin is small enough to employ it; the wound being small, no sutures are required to reduce or lessen it. No tube or other drains are put into it. It is not closed completely, but left wide open to discharge any blood, serum, or other fluids not required for healing, into a large gauze dressing placed about it; and the bone is set and held in position by some fixation method, usually a plaster cast that also fixes all the neighboring joints both above and below that require to be fixed in order to keep the fragments in position and the injured part at rest. This can only be accomplished by impeding muscle spasm always attendant upon occasions of such disasters as those of fractures. We are prone to forget the vicious circle between muscles and fragments. Muscles resent the irritation the fragments inflict, and in turn kick back and jiggle the fragments and the jiggle pricks the muscles and thus the circle has no end. Firm, bountiful fixation is the peacemaker, pain soother and sleep producer. Who has not observed the

wonders of fixation in control of muscle spasm in hip joint disease? Psoas contracted, body bent, knee flexed, and the child screams at suggestion of manipulation. Under anesthesia the limb is straightened, a spica is applied, and in a few days the child is perfectly comfortable.

A word about iodine, for little has been said as yet about that wonder-working chemical. More than a quarter of a century ago, long after carbolic acid, corrosive sublimate, potassium permanganate, and a host of other substances had been discovered and used as antiseptics, there came the announcement (from Italy, I believe) that iodine was queen of them all. It had been in use for ages before, but not as an antiseptic; and it has stood the test of time. Many substitutes have entered the field to contest its honors, and some have invaded the most lucrative fields in the front rank; but for compound fractures and many other conditions iodine stands supreme—endowed with the bite of fire, it is true, but just for a moment, and oh! how good it feels when it quits hurting, as the saying goes. I believe it has a salutary influence upon the healing of bone as well as its magic influence over the enemy bacteria. It encourages the ragged and torn tissues either to go back on the job or to be quiet about it. It seems to say to the osteoblasts, "I am your friend and protector; courage, my boy!" For some years I have resorted to it as a *dernier ressort* for help in delayed unions, perhaps non-unions, by injecting it between the fragments and about the fractures, and again and again have witnessed the erstwhile defeated forces take on new activity and promptly finish the job with a firm union. The procedure is extremely simple and safe, but it requires a strong syringe and considerable force in some cases. This can be done ordinarily without pain of consequence. If necessary, a local anesthetic or even a little gas may be employed. I have no special amount for dosage; it makes little difference whether you inject much or little—the result appears to be the same and no general reaction follows. Just how iodine does this work, being under cover, I do not know; but I have an idea of my own. It restimulates the forces relied upon by nature to finish the work they have abandoned. When the iodine enters it warms things up, and in the fervor of excitement the under layer of the periosteum becomes so excited it sends forth its munitions in full force to cope with the unexplained situation, the osteoblasts being on the scene with all their helpers set to work anew just the same as when the fracture was fresh.

An old book published some three-quarters of a century ago, Waring's *Materia Medica and Therapeutics*—the one my father placed in my hand to learn ancient medicine first—contained the paragraph from which I first got the idea of using iodine in non-unions. There it was suggested that the part be *painted* with iodine; this, of course, could not reach the spot, but went close to it.

We all know that as soon as a fracture is produced and the storm of shock has passed, nature begins her work of sending supplies to the scene of action through the liquid way, the blood current, and, not unlike any other workman, does not like to be interrupted; and this is one reason why a fracture should be set at the earliest possible moment, at the scene of the accident, or as near the scene as is compatible, in all *simple* or *closed* fractures. In case it is compound, it is a different matter. The management of these as to first aid has been referred to above.

In a case with severe laceration of the skin and other soft parts, bone comminuted and fragments penetrating the muscle in all conceivable directions, wound full of particles of soiled clothing, occasionally polluted from an unbathed surface, also splinters, grease, broken glass, iron or lead, all foreign material must be removed if possible and the wound cleansed with the greatest care and thoroughness that the circumstances of the case and the condition of the patient will permit. All bloodvessels that bleed (and often the clot is disturbed and a spurter is aroused into action) must be ligated or otherwise cared for. All loose fragments such as have no attachment to the periosteum must be removed, even though it should produce a wide gap between the ends of the fragments, and then iodine should be used freely, virtually washing out the wound, encouraging penetration to the utmost recesses of the wound, heedless of its return. I do not wash it out, as the iodine seems to disappear; but, instead, I dash in a little more iodine before "clamping the lid," then fill the wound loosely with vaseline gauze, as suggested by Orr, and from this on deal with the wound by the method which Orr has so ingeniously worked out in treating osteomyelitis. There is no essential difference as far as the wound is concerned or the demands for fixation to guard against muscle spasm except in degree, but as to indications for bone mechanics there is a wide difference. A few points will be detailed. The fragments will be adjusted and must be retained. The first is comparatively easy in compound fractures; the last offers

grave difficulties, even with the aid of adequate extension, when the question of fixation by extraneous materials is presented; also, shall it be absorbable or unabsorbable? Catgut, as in the patella and occasionally the olecranon, may suffice for perfect results, but in the long bone injuries I have not seen it of service for fixation purposes. Steel plates, nails, screws, etc., should be almost forgotten, and should never be employed except in extreme cases, and, when used, should be reclaimed within three to four weeks. This same suggestion might well apply to closed fractures, but it is not as imperative as in the compound type.

Extension.—There are few cases of compound or other fractures of the larger bones of the extremities that do not require some form of extension, and the femur never fails to demand it. From time immemorial an attempt has been made to reduce fractures by traction and to maintain extension by some means or other, although futile and deceptive in many instances. An effort for ages past was always made to correct the contraction of muscles and consequent overriding of the fragments. During my professional life traction has evolved from extension, while lateral splints were bound to the limb tightly, to the massive devices dramatically and artistically applied to the skeletal bones themselves in the form of steel pins passing through the bones, or ice tongs to which are attached weights sufficient to overcome contracture by tiring out the muscles until full length is obtained, when a lesser weight may be used. At first sight this would seem cruel, but, as a matter of fact, it brings comfort rather than pain, for it actually extends the limb and eliminates one of the factors in the vicious circle, that of preventing the ends of the fragments from rubbing together or doing other mischief which irritates the muscles and throws them into spasm. Skin traction has been employed for many years, with fair success now and then. Since the use of the Thomas splint has been adopted, the results gained by skin traction are better but still far short of all that is desirable. There is one form of skin traction that may be used to advantage in selected cases and is mentioned by Orr in his recent monograph on compound fractures and osteomyelitis. After putting the patient on the Hawley table and stretching the limbs down to equal lengths, by measurement, a strip of moleskin plaster is applied to each side of the limb, the wound having been dressed as described above. The limb is then enveloped in sheet cotton or other protective material from the ankle to the thorax, if it is the thigh, and over this a thick cast is molded, carrying it well down on the other limb also. This spica is made to fit snugly and evenly from top to bottom, and after it has well set, especially at the lowermost end, near the ankle, the moleskin plaster is given a good pull and the ends turned up over the leg and securely incorporated in the cast as more plaster is put on. Now the feet are ready to be released, and the one on the injured side is covered with cotton, and over this the plaster cast is molded to completion. Thus, the cast having a good purchase against the body, the adhesive maintains the traction. Without this simple, ingenious device the limb is prone to slip in the cast, as has been so often demonstrated by the x-ray. By this procedure, more quiet and constant traction fixation is gained than by the elastic method. When the fracture is at too low a level for skin traction, the same principle can be utilized by driving a Steinman's pin through the os calcis, and while the limb is in the extension required the plaster can be molded on in the same manner, incorporating the pins, and when dry the fracture must remain stationary as long as the pin is left, in which may be, if desired, the whole period of convalescence. There are cases where plaster-of-paris and adjunct devices must be discarded for skeletal elastic traction, but this is unfortunate for the surgeon and the attendants, more inconvenient and on the whole less comfortable to the patient, for the plaster-of-paris method is *par excellence* the best method yet produced for the management of compound fractures. It gives nature the best chance to carry on her work unmolested and unobserved except by the ever-enlightening clinical thermometer and the shadowgraph.

Last, and of not less importance, is pain. Pain is a "tattle-tale" of questionable veracity; still, it is a subjective symptom that must be heeded and investigated in all cases of disease, but in none is it of such signal import as in the case of fractures, and should arouse more anxiety in closed than in compound fractures in the absence of temperature. It may signify a tight bandage and that consequent nightmare of the surgeon, myostitis—Volkmann's contracture. If high temperature and extreme pain are present in compound fracture or any open wound with bad muscle maceration, think quickly of the worst and most rapid worker of all germs which have yet been discovered—that thief in the dark, the gas bacillus. There is also one other anærobic cousin, slow but sure, as insidious and deadly in the end, but whose ravages can be prevented by timely immunization—the tetanus bacillus. Every case of

compound fracture, especially where the skin is punctured by force from without, should have a dose of antitetanic serum.

CRIME PREVENTION *

By S. J. KELL, M.D.
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In this paper I shall confine my remarks to a discussion of crime as related to the practice of medicine and the importance of the physician in crime prevention.

Crime is a violation of civil law. The universe is being constantly changed and enlarged. Civilization is ever advancing, and living is a matter of making adjustments to meet the changing conditions, and, unless we keep ourselves properly up to and in tune with the times and the laws, we acquire an unconscious tendency to law violation. Therefore, education and familiarity with the existing laws are essential.

Penalties and punishment for law violation only prevent crime in so far as they create fear of the penalty or punishment in the minds of potential law violators; therefore, penalties should be proper and the law should be enforced with impartiality but with reason. Crimes committeed by insane persons and crimes due to physical and mental defects and diseases should be given adequate medical and surgical treatment.

Proper regulation of marriage laws should be secured to prevent procreation by persons with criminal tendencies. Children should be inspected at regular intervals for the detection of physical and mental deficiencies or ailments, and correct treatment instituted immediately for the correction of such conditions when found.

The normal child should be carefully guarded so that he will be kept well and happy. He should be taught not to be afraid, as fear is the worst enemy of mankind and destroys the mind as well as the body. At birth the child does not know fear, and it should be taught, preferably by the parents, to be brave and to control its temper. Here the physician can be of great assistance by keeping in close touch and demonstrating to the child that the doctor is its friend. By carefully prescribing and handling, and the avoidance of painful manipulations and nauseating concoctions in his treatment of children, firm friendships are made which, later in childhood, are valuable in retaining the child's confidence which is so essential.

Education of the child must begin early, and, unless systematically trained from the first, difficulty is experienced later. Kindergarten work is especially valuable, as it gives constructive character building just at the time when it is most needed. The school and home training should be on a "reward for good deeds" plan rather than a "punishment for bad deeds" plan. Trivial offenses should not be magnified, and every effort must be made to prevent fear. The leisure hours should be filled with wholesome recreation and vigorous athletic sports. True sportsmanship should be taught and capitalized at all times and carried on through the formative period, as this is the most impressive method of teaching a boy or girl to respect authority and consequently to avoid law violations out of such respect for authority rather than through fear of punishment. The community must share this burden and assume its proper responsibility to the children whose parents are not capable, competent or disposed to provide properly for their training, and any community which provides for the wholesome entertainment of its youth will be rewarded by good citizenship later.

Playgrounds should be provided with sufficient apparatus, space and so forth, as well as competent directors, so that the work will not be hampered.

Provision for recreation is necessary not only for children but also for young adults, in order that their leisure hours may be occupied by interests which tend to prevent exposure to crime. Even elderly people need to take part in such recreational sports as their age and physical condition require.

Bad habits are the result of lack of proper training, especially in the early part of life when the character is being formed, and may be considered as disease, and, properly, should be treated as disease. Physicians should keep in the forefront in all things which have for their object the development of healthy minds as well as healthy bodies.

Sufficient clinics should be established for the detection of abnormality in children. About ten per cent of children are sub-normal, and at least one per cent of the children of the country are in dire need of individual, personal and intensive treatment to prevent serious consequences. Children exhibiting irritability, anemia, mental retardation, physical defects, and emotional instability should be separated from other children and properly treated. Psychoanalysis, medication, and dental, optical and surgical treatment, together with parental coöperation and

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change of environment, will correct the course of a child's life, in many cases, and frequently will prevent criminality.

The laws should be changed in regard to law violators, and each offender should be subjected to examination to ascertain if there is any mental disorder or disposition which will render him liable to future violations before sentence is passed or before the case is dismissed because it is a first offense. It may be possible that this offense is merely the first one for which he has been apprehended. He may have definite symptoms, and may be curable and saved from future violations. On the other hand, it may be that serious consequences will result by returning him to society.

Usually, crime is not a spontaneous affair. It frequently begins in the nursery and matures after years of home-pampering, neglect, loafing, and dissipation. It can be prevented and sometimes cured by proper training and treatment.

In the young, sportsmanship, properly and early taught, frequently is a specific after physical defects have been corrected. In later life, much good can be accomplished by scientific treatment, and certainly a great proportion of the repeat-criminal's depredations can be prevented by proper diagnosis and detention when he is so steeped in crime that, even though the sentence or punishment has been fulfilled or inflicted, there is reason to believe that society will be injured by allowing him his freedom.

The physician should, and must, assume the initiative in bringing about such laws as are necessary to assure proper and suitable facilities for the development of character in the child, and efficient protection of the public through recognition and treatment, preventive and curative, of criminal conditions and tendencies, especially in the young.

CASE OF POTENTIAL ECLAMPSIA *

By W. D. FITZHUGH, M.D.
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Recently, much prominence has been given to the so-called "toxemia of pregnancy" or "general toxemia," recognized as an autointoxication originating not from without but within the woman herself. Many different theories are given to explain this toxemia of pregnant women, but the treatment deducible from all of them is nearly the same, namely, elimination treatment to assist in getting rid of the toxins through the excretory organs. Of late, prominence has been given to the generation of toxemia resulting from the products of fœtal metabolism being absorbed into the blood of the mother. Even fœtal tissue—placental elements, syncytium, and fragments of or even entire chorionic villi—have gone into the maternal circulation. Usually these fœtal metabolic products and tissue elements become oxidized in the liver and are eliminated by the liver, kidneys, and other excretory organs. It is, for the most part, inadequate functional activity of these organs upon which the retention of toxins and toxemia have their origin.

In a large majority of cases the kidneys are the organs at fault. From deficient functional activity of the kidneys, excrementitious matter that ought to have been eliminated in the urine are retained; then follows uremia or some other form of toxemia which, when it becomes sufficiently intense, produces convulsions (eclampsia) and, in the worst cases, coma and death. A common and early symptom of this trouble is albuminuria, but albumin in the urine is a symptom only. We can not regard it as a disease in itself, but only as a sign of renal disease; hence there has arisen the now universal practice of examining the urine for albumin of all pregnant women, and a microscopic examination for tube-casts, blood corpuscles and renal epithelium, as further evidence of kidney disease, should be instituted.

The frequency with which albumen occurs in the urine of pregnant women has been variously estimated at from two to twenty per cent. Probably those that obtain the higher percentages use exacting tests by which mere traces of albumen are detected, while the lower percentages are obtained by ordinary and rougher tests when quantity is greater. Slight traces of albumen may occur from the presence in the urine of mucus discharges from the vagina, urethra and bladder, without kidney disease. Bad cases of renal disease going on to convulsions only occur in about one out of five hundred pregnancies.

Etiology and Pathology.—Nothing is more unsettled than the causes and pathology of the renal troubles of pregnancy. All known lesions of the kidney—every variety of nephritis—may occur in pregnant women as in other persons. In some women renal disease may be present when gestation occurs. While some cases are thus accounted for, there are others in which renal disease begins only during pregnancy and disappears after delivery. It is the last that are difficult to explain. That the morbid condition observed is in some way produced

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by pregnancy can not be doubted, and that previously existing renal disease is made worse by gestation is equally true. Theoretical explanations that explain some cases fail to explain others. The etiological factors probably vary in kind and number in different cases. Some of these factors are here enumerated:

1. Obstruction of ureters.
2. Sudden hyperemia of kidneys.
3. Increased functional activity of the kidneys.
4. Increased blood-pressure in the vessels of the kidney.
5. Mechanical pressure of gravid uterus.
6. General increase in intraäbdominal pressure.
7. Reflex vasomotor spasm of renal arteries.
8. Absorption of toxins from the intestines.

Symptoms and Diagnosis.—The urine of every pregnant woman should be examined at short intervals, especially late in pregnancy, both chemically and microscopically, for evidence of kidney disease. The quantity of urine passed in twenty-four hours should be collected and measured, and the total amount of urea it contains approximately ascertained.

The urine may be deficient in quantity and of a darker color than it should be. In most cases there is edema, puffiness of the face and eyelids and also of the hands, so that the finger rings become tight. Edematous swelling of the feet is common, but of less significance; it occurs in many pregnant women without kidney trouble. In some cases general anasarca occurs, involving the cellular tissues of the whole body and even the serous cavities. Such a very extensive dropsy seems in some cases to be beneficial.

With these urinary and dropsical symptoms only, many women, under proper treatment, may go on for weeks and even months without any other and more serious symptoms. But in every case, whether mild or severe, there is an always darker side to the clinical picture from the liability to toxemia or uremic intoxication.

The new set of symptoms indicating this uremic poisoning, the early recognition of which is of the greatest import, are as follows: Headache, nausea and vomiting, epigastric pain, vertigo, ringing in the ears, flashes of light or darkness, double vision, blindness, deafness, mental disturbance, defective memory, somnolence—symptoms easily explained by the circulation of toxic blood through the nerve centers. These may be preceded by lassitude and accompanied by constipation or diarrhea (uremic diarrhea). Headache is perhaps the most significant and common warning symptom. In bad cases the urine is reduced in quantity (almost suppressed), very dark in color, its albumin greatly increased so that it becomes solid on boiling. Next comes the final catastrophe of convulsions (eclampsia). The convulsion fit begins with twitching of the facial muscles, rolling and fixation of the eyeballs, puckering of the lips, fixation of the jaws, protrusion of the tongue, etc., soon followed by violent spasms of the muscles of the trunk and limbs, including those of respiration; hence lividity of the face and stertorous breathing, biting of the tongue, opisthotonos, etc.

The fits last fifteen or twenty seconds, ending in partial or complete coma, possibly death, or consciousness may return to be followed by more convulsions.

Premature delivery may occur, or, if the case reaches full term without convulsions, they may be looked for during labor. In some cases they come on after delivery without having previously occurred.

Prognosis.—This will largely depend upon the degree to which the uremic toxemia has progressed. Many cases with albumin, casts and edema, under proper and timely treatment, escape toxemia entirely and go to term without further trouble; in others, the albumin and casts increase in spite of treatment, hence toxic symptoms and eclampsia are likely to occur. The outlook is now most grave. The maternal mortality after eclampsia is about twenty per cent. The child often dies either from premature birth or from the existing toxemia. Death of the child *in utero* is sometimes beneficial to the mother; her toxic symptoms improve, supposedly because the metabolic processes of fœtal life cease to produce toxins injurious to the woman.

Generally speaking, renal symptoms appearing early in the pregnancy are worse than those occurring later; the woman has longer to go before the relief of delivery. The majority of cases occur in primipara, in whom the prognosis is less favorable, owing to their labors being usually slower and longer than in multipara.

Treatment.—The main principle of treatment is elimination. The excretory functions of the bowels, skin, liver and lungs must be increased to take the place of the inadequate elimination by the disabled kidneys. In this way toxemia is prevented or, when present, may be relieved. The case which will be reported will best illustrate this:

CASE.—M. L., 26, colored; first seen by me on January 12, 1929. Family history negative. Personal history: Has had five children, the oldest of which is ten; has also had an abortion, at two and one-half months. Said I delivered her first child ten years ago, but think this is a mistake, as I have no record of having done so, nor do I remember having delivered her. The last child was delivered in Welch Hospital at seven months after she had had several spasms. The child died and the mother was in hospital eighteen days. This was in 1927.

Present illness: Moved to this community early in January, from Eckman, W. Va., where she had been treated by the doctors there for indigestion. I was called because of persistent epigastric pain.

Examination: Well-nourished woman of medium size, temperature 97°, pulse 100, tongue coated; blood-pressure 205/152; skin dirty. Lying in bed with head elevated because it was more comfortable tha nlying flat on one pillow. Gave history of bowels not having moved for several days. No appetite for food or water. Kidneys acted only about twice in twenty-four hours, and rather small quantity at that. Could not obtain specimen of urine at this visit, nor was I able to obtain it for ten days, on account of the fact that I did not have the coöperation of the family at this time. Gave the patient some bismuth for gastric discomfort and ordered a tablespoonful of epsom salts. Saw patient next day and she was somewhat relieved of the gastric disturbance. Saw patient on January 20, and at this time she was suffering with a rather severe headache. Bowels and kidneys not improved. Patient up and around room, which was rather cold. Ordered the patient to bed, room to be kept warm, liquid diet, milk and plenty of water. Gave five grains of calomel to be followed by salts. Saw her again next day, noted some improvement in symptoms. January 23, was called because patient was unable to see clearly. She could see, but one object appeared as two. Had some ringing in ears and twitching. Pulse 110, temperature 97°, blood-pressure 250/128. Gave ten grains of calomel to be followed by salts, and left "C-C" pills to be taken two at night, followed by salts if bowels had not acted freely. This time I succeeded in obtaining specimen of urine. This specimen had a specific gravity of 1.035, was of a very dark color, and became solid on boiling. Gave urotropin, ten grains of which were to be taken in a glass of water every four hours. I saw patient daily until February 3, when I went to the hospital to be treated myself, and on February 4 she went into labor and was delivered by Dr. Fox, whose notes of delivery and subsequent course follow as were given by him:

Before delivery on February 4 the blood-pressure was 260/156 and there was considerable albumin in the urine. There were some spontaneous pains, which were helped by repeated small doses of pituitrin until, after a few hours, the woman gave birth to a baby about four and one-half pounds in weight. The delivery was approximately normal, without convulsions and with only a small amount of hemorrhage.

February 5, pulse 88, blood-pressure 220/140.

February 6, pulse 100, temperature 98 3/5°.

February 7, pulse 110, temperature 98 3/5°, blood-pressure 216/134.

February 9, pulse 114, temperature 99 3/5°, blood-pressure 220/125.

February 11, pulse 130, temperature 98 4/5°, blood-pressure 220/135.

February 13, pulse 100, temperature 98 2/5°, blood-pressure 210/125.

February 16, pulse 92, temperature 98 3/5°, blood-pressure 230/125.

Urinalysis: Specific gravity 1.016, albumin improved, sugar negative.

Conclusions.—1. Early recognition of a potential eclamptic state should be made.

2. Much can be done to prevent eclampsia if the condition leading to it is kept in mind.

3. The importance of giving plenty of cathartics and keeping the intestines clean, and also keeping the skin clean, is stressed. In other words, clean up and keep clean externally and internally with plenty of pure water.

4. Liquid diet (milk) is essential in all cases of impending eclampsia, with a forced amount of water.

5. Be sure that the skin is not chilled. Keep the room warm and patient in bed, well covered.

The condition here recorded is, I suppose, as old as medicine itself; but it was a very interesting case to us. I find that it is the papers on common conditions, read at society meetings, that help me most, rather than the uncommon.

I wish to give due credit for the free use of A. F. A. King's "Manual of Obstetrics," and also "The Principles and Practice of Obstetrics" (De Lee), in this paper and report.

THE FAMILY PHYSICIAN'S RELATIONSHIP TO HYPERTENSION *

By MILTON C. BORMAN, M.S., M.D., F.A.C.P.
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Fahr has calculated that approximately 140,000 persons in the United States die each year from the consequences of high blood-pressure. He states that "this is as great as the combined death rates for cancer, all forms of tuberculosis, and all forms of respiratory diseases, including pneumonia, for the same age category and year, and twice as great as the death rate for cancer alone." He reckons further that 50% to 55% of these patients die of heart failure, 35% to 40% of apoplexy, and 10% of uremia.[1] Fahr further states that a child born in the eighteenth century according to the averages might have expected to live but to the age of thirty-nine years, and the adult of forty-five years today can not expect to live much longer than lived the eighteenth century adult of the same age.

The increased life expectancy of the modern child is due primarily to our control over epidemic and endemic diseases due to microörganisms, such as typhoid fever, tuberculosis, diphtheria, scarlet fever, pneumonia, and to prenatal and postnatal care as well as better hygiene, sanitation, and the diffusion of knowledge concerning proper infant feeding. *The greatest factor holding us back in our attempt to increase longevity in the adult appears to be hyperpiesia.* What is the status of our present knowledge of hypertension?

This subject is of personal interest to us, for, as Riesman has said, "For most of us in the medical profession the thread of life runs in the walls of the heart or along an artery. It may be snapped suddenly or it may be stretched and pulled until it gives way gradually, strand by strand, so that the end is 'but a sleep and a forgetting!' " [2]

Janeway has called attention to the three fundamental factors in the production of increased blood-pressure: increased volume of blood, increased peripheral resistance, and increased cardiac energy. A variation of any of these factors will influence the blood-pressure, but it would seem that the increased peripheral resistance would be the most important.

Joseph Barach,[3] of Pittsburgh, has suggested that we view our patient's disorder not as an end product but as a disease process progressing in the natural sequence of events. He regards hypertension, particularly essential hypertension or hyperpiesia, as the manifestation of a constitutional tendency. In these patients childhood infections are many up to the age of puberty, regardless of hygienic surroundings. Following puberty, the course of events is determined by sex. In the male, neuro-circulatory asthenia develops with impaired production and the development of hypertension. This, he states, has also been commented upon by Leonard Murray[4] and by Selian Neuhof.[5] The hyptertension may be transitory, but later becomes permanent. In the female, the so-called tonsil-thyroid syndrome appears. In these patients he has noted "diseased tonsils, chronic pharyngitis, enlarged cervical lymphatics, colloid thyroids, obesity, abnormally large breasts, alteration in the skin and subcutaneous tissues, and trophic disturbances of the skin, hair and nails." There are also "low metabolism, low blood-pressure, slow pulse, menstrual disturbances, and diminished response to physical and mental stimuli." The menopausal symptoms are exaggerated, and then hypertension is established. Once established, the hypertension persists until decompensation, depending upon organ inferiority, is established. It may be cerebral, cardiac, or renal failure.

Levine and Fulton,[6] of Boston, in their study of 762 cases of mitral stenosis, concluded that with advancing years patients with mitral stenosis have vascular hypertension with much greater frequency than the average population. Out of 159 cases of mitral stenosis in patients over 45 years of age, 58% had hypertension, due, they believe, to a particular vulnerability of those patients for both the infectious and degenerative types of vascular disease.

Boas and Frant[7] have studied capillary pressure in patients with normal blood-pressure and those with hypertension. Two groups of hypertension patients were noted: those whose capillary pressure ranged between 21 and 70 mm. Hg and those whose capillary pressure readings were normal, *i.e.*, 30 mm. Hg. or less. These two groups could not be separated clinically. In essential hypertension, the capillary pressure was low.

Isaac Rappaport[8] has studied blood-pressure and respiration. He believes that the depot function of the pulmonary circulation is the principal factor in the regulation of pressure conditions prevailing in the systemic circulation. Reduction of this depot function as caused by reduced respiratory function is probably the most important factor in his opinion in the pathogenesis of chronic hypertension. The work of Vincent and Thompson is quoted. They found

* Read before the Greenbrier Valley Medical Society, Ronceverte, West Virginia, December 12, 1929.
From the Montgomery Clinic, Montgomery, West Virginia.

that hyperventilation not extending to the point of apnea produces a 25% drop in the systemic blood-pressure. The recent emphasis placed by Abrahams, that there is a tendency to lower systemic blood-pressure in athletic persons, is noted. The importance of the capillary area in the lungs is discussed. Starling states that "at inspiration the pulmonic capillary area may hold 1/12, with compression it may be reduced to hold 1/60 of the total blood volume," adding that "such changes may exercise considerable effect on systemic blood-pressure." Blumgart and Weiss, with an improved technique, found "that the lungs normally hold about 21% of the total circulating blood volume." The work of the Germans, Lintz and Weinstein, on the relationship between the pulmonary surface and blood-pressure shows that 86% of these patients having high blood-pressure had small lungs, and they believe that "deficient oxygenation will some day account for hypertension."

Eli Moschcowitz,[9] of New York, in a recent well-written and intensely interesting paper on this subject, decries the likelihood of a single chemical substance ever being the cause of hypertension in the greater circulation, believing that in this sense the ultimate cause of hypertension is unknown and will probably remain so. Among the immediate causes, he believes the psychic factors are prominent. The individual who develops hypertension is the antithesis of the child in psyche and develops a characteristic physique. The condition is not hereditary, but only appears so because of familial environmental influences. This individual is largely the result of the conditions of modern life. He concludes that the causes may be psychic, endocrine, or mechanical. The menopause represents merely the critical age period in which hypertension is more liable to occur.

In a more recent article, Moschcowitz[10] discusses the cause of arteriosclerosis, stating that this change is due to intravascular pressure; that hypertension is a "heightened phase of a normal physiologic state, namely, intravascular tension." This would magnify the importance of controlling the intravascular pressure if possible, for if hypertension means arteriosclerosis, and arteriosclerosis means deficient blood supply leading to inadequate and disturbed function and, ultimately, death of the part or whole, controlling the initiatory mechanism will prevent this hastened response and change.

During the past few decades of specialism, we have partially lost sight of that individual who really carries on the daily administration to the sick and ailing. Osler said of him: "You can not reach any better position in a community: the family doctor is the man behind the gun, who does our effective work. That his life is hard and exacting; that he is underpaid and overworked; that he has but little time for study and less for recreation—these are the blows that may give finer temper to his steel, and bring out the nobler elements in his character."[11] *The rôle of the family doctor in the problem of hypertension is threefold: it concerns prophylaxis, early detection, and treatment.*

The value of frequent general physical examinations has been amply illustrated to each of us. The detection of an elevated blood-pressure during the routine insurance examination, or in the patient who may have come in for some unrelated complaint, is a frequent occurrence. It can honestly be charged against many of us that we are not vitally interested in this phase of medicine, although we all admit we should be. We say that we are so busy caring for those who are really suffering from illness that we do not have time or energy to look for defects and trouble when it is giving rise to no apparent symptoms. But we should encourage the frequent and periodic complete examination, which should include a careful history as well as a complete physical examination, urinalysis, blood count, and serological study. If we are not sufficiently interested to do this, let us send our patients to some one who is conscientiously interested in preventive medicine. Let our county medical societies foster preventive medicine programs. Let each of us encourage the showing of films or the distribution of literature educating the public to submit themselves for such periodic health examinations. Let us advise hypertensive parents to attempt to modify the environment of their offspring, and, if possible, prevent intermarriage of offspring of cardiovascular families. Let us always suspect the existence of hypertension, actual or potential, in the offspring of cardiovascular parents, whether we consider hypertension an inherited tendency or simply an environmental one. Let us prevent associated conditions such as focal and systemic infections.

The early detection of hypertension is possible only if we are always on the alert, always suspecting the condition, and routinely taking blood-pressure readings with a reliable mercury sphygmomanometer. This will save our patients much suffering, and by proper direction their lives may be prolonged or the condition occasionally actually overcome. It

will save us considerable personal embarrassment and preserve our intellectual honesty. Do not overlook the value of a careful routine urinalysis, eyeground examination, and blood serological studies in the detection of the potential hypertensive patient.

The third and final rôle of the family physician concerns treatment—not only immediate treatment, but, because of the physician's peculiar position and relationship to the patient, the constant treatment of the patient. We must encourage the patient to persevere in the treatment suggested, sympathize with him, and with patience help him to solve his daily problems that might hinder effective treatment.

Treatment.—It is imperative that these patients be given a careful diagnostic study at the outset. This is of extreme importance because of the information this will give concerning the stage of the disease and the associated changes that will guide prognosis and intelligent treatment. Such a diagnostic study includes a complete history and physical examination, careful repeated blood-pressure determinations with a reliable instrument at frequent occasions during the day and under varying conditions. We have learned of the great value of the diastolic pressure, especially as concerns prognosis. Special attention should be paid to the peripheral arteries, a thorough study of the eyegrounds is essential, and there should be a complete blood count, urinalysis, blood Wassermann and nitrogen determination, and renal function tests, including the phenolsulphonephthalein test, renal concentration and excretory tests. The exact size of the heart and aorta is best revealed by the x-ray in the six-foot plate and by fluoroscopy. The electrocardiogram is of great value in determining the condition of the heart muscle and the nature of an arrhythmia.

In the prehypertensive stage, we should teach children and adults in vascular families to avoid excessive emotional, mental and physical strain, to choose occupations compatible therewith, to relax at frequent intervals during the day, to curb ambition, not to intermarry with offspring of vascular families, to take rest periods in bed as frequently as one day per week and one week per month, to take prolonged vacations if possible, and to return at intervals of three or four months to their physicians for examinations, even though apparently well. There should be at least nine hours of sleep each night, and an hour's rest after the noonday meal. Guidance and persuasion, and not fright or anxiety, should be used to attain these measures. These patients should also be taught the dangers of obesity and how to keep their weight at a normal level. Alcohol should be interdicted. Frequent hot baths are useful. Hearty meals should be avoided, as well as all rich, concentrated or highly seasoned foods. Excess of salt in the diet is to be avoided. Temperance in all things should be the motto. Infections, focal or systemic, are to be carefully guarded against.

The compensatory period of the hypertension stage is recognized by the elevated blood-pressure which may fluctuate with normal periods, slight cardiac enlargement as revealed by the teleoröntgenogram, and early sclerosis of the retinal arteries. In this period of definite hypertension the previously suggested measures are rigidly enforced. More relaxation and rest are advisable. Sedatives such as calcium bromide in ten-grain doses three times a day, and phenobarbital, one and one-half grains morning and night, are useful. Intestinal elimination by the use of milk of magnesia, salines, cascara sagrada, mineral oil, preparations with agar-agar, and phenolphthalein should be encouraged if necessary to have one or two soft but well-formed daily stools. Saturated solution of potassium iodide in ten-minim doses after each meal has been used empirically for many years. Potassium sulphocyanate, in doses from two and one-half to six grains three times daily, has been reported by several German and American observers to be of definite value in producing a fall in blood-pressure. Liver extract is likewise being investigated for the same property.

The period of decompensation is recognized by cardiac, renal or cerebral symptoms, including dyspnea, cough, hoarseness, nocturnal paroxysmal dyspnea, orthopnea, flatus, epigastric fullness, anorexia, nausea, vomiting, cardiac arrhythmias, drop in blood-pressure, edema, râles at lung bases, and hepatic enlargement, nycturia, albuminuria, hyalin and granular casts, increasing blood nitrogen content, oliguria and anuria, cephalgia, disorientation, amnesia, failing vision, retinal hemorrhage, cerebral hemorrhage, embolism, and encephalomalacia. The treatment in this stage of decompensation consists in rest in bed, sedatives, especially morphine sulphate, restriction of fluids, soft, easily assimilable salt-free low-protein diet, laxatives, digitalis, theophyllin, ammonium chloride, salyrgan, novasural, and venesection. It would seem that venesection might be very useful also in the compensatory stage when symptoms of decompensation might be anticipated, provided the procedure was not used too frequently.

In closing, let us recall the secret of the father of modern cardiology, the patient country physician of

Burnwell, who realized that the only way to find out the true significance of a symptom was to wait and see what happened to the person with it. The cause of hypertension is one of the greatest mysteries in medicine. Who knows but that it will be the lot of some patient family physician, another Mackenzie, who watches his patients throughout four or five decades, to discover the true explanation? What a glorious mission his will be!

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THE SIGNIFICANCE AND MANAGEMENT OF SHOCK *

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Traumatic shock, a complication commonly associated with various wounds and injuries of the body, is still one of the major problems of surgery, and is of vital importance to industry in general. I propose to discuss briefly the theories of etiology together with symptoms, diagnosis, prophylaxis, and treatment.

After severe wounds or direct violence, if immediate death is escaped, the condition of surgical shock may supervene, and may still prove fatal. Shock, briefly defined, is a general bodily state following traumatic wounds, surgical operation, or severe emotional states, and is manifested by a low blood-pressure, a rapid, thready pulse, pallor, sweating, shallow respiration, subnormal temperature, and faintness.

Primary wound shock refers to those patients in whom the onset of the typical symptoms occurs suddenly, associated with the constant low systolic blood-pressure.

Secondary shock is confined to those cases in which all the symptoms of shock manifest themselves only after a longer or shorter period of continuous hemorrhage, exposure to cold, complicating infections, etc. All observers agree that the one common pathognomonic finding in shock is the persistent low systolic blood-pressure. It has long been evident that the word *shock* is a loose and unscientific term—in reality, it is nothing but exhaustion. We have come to look upon shock as an interference with the most fundamental mechanism of life—an interference with the mechanism for the *transformation of energy*.

The causes of shock may roughly be divided into two groups: First, comprising those in which an excessive energy transformation leads to an intracellular acidosis; second, those which cause intracellular acidosis and interference with internal respiration without an excessive transformation of energy.

Dr. Crile, of Cleveland, who has made an exhaustive study on the subject of shock, states that the most vital effect of shock is the impairment of the vasomotor mechanism. He believes that exhaustion of the cells in the brain, liver and suprarenal glands constitute shock. Crile has shown that definite histological changes can be demonstrated in the nerve cells of shocked animals, which they attribute to the afferent impulses reaching the nerve cells from stimuli induced by trauma, fear, emotions, etc. On this basis Crile has developed his theory of anoci-association of nerve blocking. Crile's theory is based upon the principle that every stimulus awakens an association. These associations may be injurious to the individual (this is termed *anoci-association*), or they may be of benefit to the individual (or *bene-association*). The sight of appetizing food is a bene-association. The nerve centers are stimulated as if the food were actually being eaten and the mouth "waters." All of life, therefore, is made up of bene- and anoci-associations, and the constant effort of the individual is to increase the former and decrease the latter.

A word as to the predisposing causes of shock:

1. Age: The aged do not endure shock well. The risk is determined, not by the age of the patient but by the age of his circulatory apparatus. When aged patients are subjected to injury, the immediate circulatory and other changes may be slight; but,

* Read before the McDowell County Medical Society in May, 1929.

under these conditions, the power of compensation or rebound is likely to be equally slight.

2. Sex: Before puberty there is little or no difference in the susceptibility of the sexes. After puberty, especially after the menstual period, the female becomes less stable. The male grows more hardy. During the child-bearing period the female develops an increased capacity for shock. During the menopause the female again becomes more susceptible to shock. After the period of developing menopause the female has entered upon an unbroken period of quietness and her resistance is increased. At this corresponding age, the male is carrying the greatest burden of his career, and from this period on to the end he is not so good a surgical risk as is a woman.

3. Time of Day: There is a marked daily variation in the process of metabolism of the body, beginning in the morning and ending in the evening. The vital processes are more active, reserved forces are at a maximum, the psychic factor at a minimum on rising in the morning. The most unfavorable time is from one to two o'clock in the morning. Night accidents are likely to be more grave than equally severe ones occurring during the day. In lingering illnesses, more deaths occur after midnight than during the day.

4. Mechanical Causes: The most important factor in the production of shock is the mechanical—that is, the mechanical stimulation of nerve tissue. The effect of trauma to nerve tissue is that of sending afferent impulses toward the centers. These impulses with their cumulative effect on the centers result in the production of shock.

Whatever the cause of shock may be—whether psychic, traumatic or toxic—the basic phenomena are the same. The individual is prostrated; his face is white and shrunken; there is no saliva, no gastric juice; the urine is malodorous; the mind is dull and the temperature is subnormal. The behavior and appearance of a man in shock is self-diagnosed—"The picture is dramatic." Laboratory observations have shown that in shock, from whatever the cause, the reserve alkalinity of the blood is decreased; that there are definite intracellular changes in the brain and in the liver; the electric conductivity of the brain is decreased, and that the *electric conductivity* of the liver is increased. Crile's theory that man is an electrochemical mechanism interprets many of the phenomena of shock. It is based on the hypothesis that the body, as a whole, is an electrochemical mechanism, the positive pole being the brain, the negative pole the liver, the connecting wires the nerves, the salts, in solution, the electrolytic fluid in which the electrochemical mechanism is immersed. Therefore, when either pole (that is, the liver or the brain) is removed or destroyed, the organism perishes. In accordance with this conception, exhaustion is the result of a diminution of the difference of potential between the poles, due to a decrease in the brain, which in turn results from a decreased difference in the potential in the constituent cells. When the difference in potential reaches zero, the organism is dead.

If this theory of conception is true, our efforts in treatment should be toward supplying these constituent cells with the two essential elements—water and oxygen; it should also emphasize the extreme importance of rest and sleep. This theory would suggest that the essential function of sleep is to provide a period during which the difference in potential decreased by the activities of the day is restored.

The diagnosis of shock is self-evident. The most important symptoms of shock are those produced by an acute anemia. The blood-pressure is lowered. The pulse at first is not unusually accelerated. Sooner or later it becomes rapid, until the last moments of life, when it may again become slow. The pulse wave is short and easily compressible. With the progressive shock the output of the heart is diminished with each beat, and with it there is a diminution of the force of its beat. As a result of the failing circulation the face is blanched.

Respirations are, as a rule, increased. Both the inspiratory and the expiratory phases are quickened and the pause is lengthened.

Both the voluntary and involuntary muscular systems are relaxed; the patient maintains the posture in which he falls; the reflexes are diminished, and in profound cases the voluntary muscular power is lost. The facial expression is typical—the face is shrunken, pinched and elongated, and there is a languor in the expression. The eyes have lost their lustre and are sunk back in the sockets. The patient has a staring expressing. Lips are pale; the lower jaw is drooping, the mouth partly open; the skin has a white hue. The fingers and nails exhibit a bluish color, while the hands are cold and clammy.

Treatment.—While the treatment of each patient should be individualized, nevertheless the employment of protective measures is more or less routine, for in all cases, and especially in bad-risk patients, the management of the case should be based on

possibility and directed by probability—not by the physical state of the individual patient at that moment. In other words, anticipate your shock. This conception is comparable to the principle of preventive medicine—*i.e.*, do in advance, on "bad risk" patients, all that you would do should this patient develop shock.

Therefore, in all traumatic injuries and in all surgical operations on "bad risk" patients, we should foresee the possibility of resulting shock and treat the patient accordingly. The first and most important thing is to see that the patient's body is not unnecessarily exposed to cold. The body should be wrapped in warm woolen blankets, hot-water bottles should be applied to the patient's body, hot drinks should be given by mouth if patient is able to take fluids. The patient should be kept at absolute rest by the use of morphine. Morphine by hypodermic injection is of definite value in all traumatic cases, and should be given in all cases except those in which patients are suffering from depressed fractures of the skull, in which condition the respiratory and cardiac centers are already impaired by the increased pressure on the brain and the morphine would act only to increase the already depressed respiratory and cardiac functions. Clinical experiences show that morphine does harm when patients are cyanosed; therefore, cyanosed patients should never receive morphine. Morphine should be used to secure physiological rest in all traumatic cases except in patients suffering from intracranial pressure due to head injuries, and in cases where the patient is cyanotic. In these latter cases, rest can be assured by the use of mild sedatives—for instance, bromides gr. 60 and chloral gr. 30 dissolved in two ounces sweet milk and given per rectum.

In addition to establishing physiological rest to the body, it is as important to establish a physiological rest to the injured part of the body, if possible. That is, if the patient is suffering from a fracture, it is necessary to put the fracture at rest by the use of first-aid splints. This will cut down the abnormal stimuli coming from the injured fragments to the cells in the brain—thereby cutting down the danger of shock. Attempts should not be made to reduce the fracture or to repair the injury until all danger of impending shock is past. All repairs should be done under deep narcosis, if possible, or under nitrous oxide anesthesia. Clinical observations have shown that nitrous oxide-oxygen anesthesia is preferable and supplies the necessary oxygen to the cells, which is a means of combating shock. Crile has shown experimentally that under approximately equal trauma the changes in the brain cells were three times as great under ether anesthesia as under nitrous oxide-oxygen anesthesia; that the fall in blood-pressure is two and one-half times greater under ether than under nitrous oxide, and, finally, that the condition of the animal was worse after trauma under ether than after equal trauma under nitrous oxide-oxygen. In the course of our surgical experience here, we have observed constantly the protective effect of nitrous oxide-oxygen anesthesia.

Drug therapy plays little part in combating surgical shock, except for adrenalin, and its action is only transitory. Crile has shown that the drug stimulants in common use, such as alcohol, strychnine, nitroglycerin and digitalis, not only did not prevent or lessen shock but that, on the whole, they predisposed to or increased the shock. He shows that shock could be produced by the use of strychnine.

Probably the most important way of maintaining the normal hydration of the cells of the body is by means of forced fluids. This can be accomplished by forcing fluids by mouths or by giving large quantities of normal salt by infusion method—two or three thousand cubic centimeters of normal salt can be given under the breast every 24 hours. This will increase the amount of circulating fluids and thus increase the fluid pressure in the body. In cases of shock due to severe hemorrhage, early blood transfusion is indicated.

To summarize, the treatment of shock is as follows:

1. Absolute physiological rest, maintained by means of morphine or milder sedatives.

2. Maintain the normal temperature of the body by means of woolen blankets, hot-water bottles, etc.

3. Maintain the normal hydration of the body cells by supplying fluids by mouth, per rectum, or subcutaneously.

4. In cases of severe hemorrhage, or in cases of acidosis following shock, employ early transfusion of blood.

If urgent operation is necessary, in all cases employ nitrous oxide anesthesia combined with local anesthesia, if possible, in preference to ether.

In the words of James William Kennedy, I think it is appropriate to repeat this point to all in the profession: No one can take liberties with injuries; and even the most simple wound, received in the most casual manner, may have its tragedy.

CASE REPORTS

REPORT OF A CASE OF BILATERAL BREAST TUMORS: ONE SIDE BENIGN AND THE OTHER MALIGNANT

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Miss K., aged 63, white and single, presented herself in October, 1929, with the complaint of "lumps in both breasts." The patient stated that she was operated upon eleven years ago, at which time both ovaries were removed along with two small fibroids. The uterus was left *in situ*, and since that time there has never been any discharge or bleeding from the uterus nor any complaint referable to it. There has been no abdominal complaint except for some gaseous distention during the past few months. At the present time there is no discharge from the cervix, which is normal in appearance. The uterus is small, anteflexed, and fixed. Just above the uterus and to the midline there is a palpable mass about the size of an orange, which is not tender but is tympanitic and thought to be distended bowel. At about the time of her previous operation she noticed that her right breast seemed to be a little smaller than the left, and that there was some slight retraction of the nipple. A mass gradually became larger in the right breast, with marked retraction of the nipple and some reddening of the skin around it. At the time the patient presented herself this mass was the size of a lemon, the nipple and a small area of the surrounding skin was adherent to it, which in turn was adherent to the pectoralis major. In the left breast there is a hard, firm, and somewhat nodular tumor mass in the upper and outer portion, which is about the size of a small orange. This mass had been noted for the past six months. There is no retraction of the nipple or skin, and the mass is freely movable over the pectoralis major and under the skin. The glands in the anterior portion of the axilla are palpable and firm to the touch. There has never been any pain or tenderness, no bleeding from the nipples, and no previous mastitis. Both sides were operated at the same time, and the following report was returned by the pathological laboratory:

Gross examination: The left breast shows a tumor mass about 6 cm. in diameter. The overlying skin is not adherent. The mass is grayish in color, encapsulated, and firm in consistency. On section the growth shows numerous small papillary processes extending from a base of firm tissue, smooth, and of the same consistency throughout. Some of the papillary processes are a dark reddish-brown color.

The right breast shows a small, hard, granular nodule just beneath the nipple, which, on section, appears to be adherent to the mass. Axillary tissue shows five small, rather firm lymph nodes.

Microscopic examination: Sections of the left breast show a growth composed, for the most part, of fibrous connective tissue. This tissue forms small papillary projections which are covered with epithelium. Other areas show compression of the ducts into a thin line of epithelium. In some instances there is a slight epithelial hyperplasia. The axillary glands show a proliferation of the epithelial cells.

Sections from the right breast show a scirrhous type of epithelial tumor growth. The cells vary in size from small, more or less oval-shaped cells to large polyhedral cells. They are growing in small groups and cords of cells. Some ducts show a marked hyperplasia of the epithelium which completely fills their lumina. There are also groups of cells infiltrating the surrounding fat. The connective stroma is thick and often shows extreme hyalinization about groups of the epithelial cells. In the center of one section there is an area in which there is liquefaction necrosis and hyalinization of the stroma and epithelial cells. The picture suggests that, with the hardening or hyalinization of the connective tissue, the epithelial elements are more or less compressed, and, in some areas, have undergone atrophy. The stroma is markedly infiltrated with lymphocytes.

Diagnosis: Left breast—Intracanalicular papillary type of adenoma; chronic lymphadenitis of the axillary glands. Right breast—Scirrhous carcinoma.

ABSTRACTS

Report of Three Cases in Which the Mojon-Gabaston Method Was Employed

JULIUS JARCHO, M.D., F.A.C.S., New York (*S. G. O.*, February, 1928).—Manual removal of the placenta results in a ten per cent mortality and about a twenty-five per cent morbidity. The hazards are: infection at the site of placental attachment due to implantation of organisms in this susceptible area, hemorrhage during or after the procedure, shock, and uterine rupture. The value of some simple method effective in an appreciable number of

cases is quite evident, especially when the patient is not in a hospital. It is self-evident that there must be made a differentiation between a placenta merely retained or truly adherent, and it should be clear that in free hemorrhage the manual removal may be demanded.

Mojon, of Geneva, in 1826 described his method of injecting into the vein of the umbilical cord water slightly acidulated with vinegar. Gabaston, of Buenos Aires, in 1914, reported an improved and satisfactory technique, using warm, sterile, normal saline solution. Dr. Jarcho, parenthetically, encourages the more general use of rectal examinations in obstetrical practice, and reports three cases of adherent placenta in which the Mojon-Gabaston method was successfully used.

The author summarizes:

"1. The procedure is simple, requiring only a few saline tablets for the solution and a Record or Luer syringe.

"2. No anesthetist is required, as for manual extraction.

"3. It is not necessary to rescrub or change gloves.

"4. Since the injection is made into the unsoiled portion of the protruding umbilical cord, there is no danger of carrying infection.

"5. In placenta accreta, there is a possible chance of securing separation by the Mojon-Gabaston method, or by this procedure in conjunction with Crede expression. Furthermore, even if the injection of the saline does not prove effective, it facilitates the subsequent manual removal of the placenta.

"6. In precipitate labor, when there has been no time to prepare the external genitalia properly, manual extraction is hazardous because of the great likelihood of subsequent infection. In such cases, the Mojon-Gabaston procedure is much to be preferred.

"7. The site of the injection may be touched with tincture of iodine or mercurochrome. The bladder should always be emptied before the injection.

"8 In none of my three cases were there any untoward results.

"It is very useful in febrile and infected patients."

C. L. W.

TUBERCULOSIS ABSTRACTS

Tuberculosis Prevention in Europe

Modern plans for curbing the spread of tuberculosis consist of a combination of medical and social measures, which aim (*a*) to prevent infection and (*b*) to inhibit the development of actual disease, once infection has taken place. The techniques employed for achieving these aims vary in actual practice according to the viewpoints of the several workers and the peculiar situations of their communities. W. Bolton Tomson, M.D., in a recent book, "Some Methods for the Prevention of Tuberculosis," describes several outstanding measures employed in European countries, which illustrate various emphases on details of method.

France.—Professor Grancher realized the possibilities of separating the newborn from its tuberculous mother, and, as the result of his labor, the *Œuvre Grancher*, a society for protecting children against tuberculosis, was established in 1903 and received governmental endorsement two years later. It arranges "for children from three to ten years of age who are not infectious to be placed out in country districts, where they are educated and stay until they are thirteen years of age." Over 2,500 children have been cared for, and during a period of over 17 years only seven cases of tuberculosis were registered. The average cost per child is about one-sixth the cost of healing a tuberculosis patient in a sanatorium.

Another society, the *Placement Familial des Tout-Petits*, deals with children from birth. The newborn baby is isolated temporarily in a *crèche*, or baby ward, for observation, then cared for at a maternity clinic for about three years, after which he is boarded out in a peasant family free from tuberculosis. Separation between mother and child is complete, except in rare instances where breast-feeding seems essential. The mother is induced to give up her baby by kindly persuasian, but the surrender must be complete for a period of not less than two years. Parents may make four visits to the child during the year. The foster parents are supplied with the infant's clothing, a cradle, and a perambulator. They are bound by definite rules to care for the child as specified by the association and to bring the child periodically to the center for observation. The 1927 report of this society states that of the 434 children dealt with, there were 19 deaths, only one of which was due to tuberculosis.

Belgium.—The Belgian National League Against Tuberculosis operates on principles similar to those employed in France. It receives financial aid from the government, municipalities, private donations, fêtes, etc., and allots grants to its several branches

on a per-day per-child scale. Out of 3,000 children dealt with, only one has died from tuberculosis. As in France, many of the children placed in foster homes decide to remain in the locality of their adoption on reaching maturity.

Switzerland.—In Switzerland, the emphasis is on sanatoria and on preventoria. A federal subsidy helps to finance the plan of placing children in preventoria, and allotments are made to the institutions on a per-child per-day basis. The results appear to be not so glowing as those reported from France and Belgium. For example, a study was made (terminating in 1923) of 323 patients from 3 to 25 years of age who had been inmates of the Sanatorium de Wald at Zürich: Of 195 cases of mild severity, 8.7% had died; of 31 cases of medium severity, 42.0% had died; of 97 cases with severe lesions, 85.5% had died.

Deep-rooted tradition, misplaced parental affection, and the absence of compulsory laws are said to make it difficult to secure proper care for children of tuberculous parents before it is too late. Recently, however, most people are realizing the significance of Grancher's principle, and the demand for preventorium care is rapidly increasing.

Norway.—A tuberculosis act, passed in 1900, makes the notification of all cases compulsory. The doctor in charge is obligated to instruct the patient and to enforce the recommended precautions. If the patient is recalcitrant, he may be sent to a "home for consumptives," which is done particularly in cases where children are endangered, though the law does not yet permit the forcible separation of husband from wife. Each town and parish has its tuberculosis committee, responsible to a central tuberculosis committee for the whole kingdom. Poor children of tuberculous parents are also placed in homes and institutions, in which case two-fifths of the cost is borne by the state while the county and town in which they live bear the remainder. When the tuberculosis act was first enacted, no institution existed for isolating adult cases. The Norwegian Women's Health Association then collected funds and established, in 1903, a "Nursing Home for Tuberculosis" near Oslo, which has been followed by the establishment of 100 similar homes with a total of about 2,000 beds. Also, a special home was opened for infants of tuberculous families, many of whom are received at birth. This is, in effect, the Grancher system, except that children are institutionalized instead of being placed in private homes. Other devices, such as open-air schools as we know them, are also in use. At present, an effort is being made to improve housing conditions, for, as the author says, the infection may be *minimized by dilution* to those who live in daily contact with an infecting agent.

Sweden.—The system in Sweden is essentially like that of Norway. An excellent demonstration was recently completed. It began in 1904 in a poor district of medium size, situated in a remote spot inhabited by a comparatively stationary population and infested with tuberculosis. Surrounding districts of similar type served as controls. The demonstration centered around a building serving as general headquarters, as well as a cottage hospital and children's home. In the twenty years' period, tuberculosis morbidity was reduced 33% and the mortality 28%, whereas practically no reductions were noted in morbidity or mortality in the control areas.

England.—In England, prominence is given to the view that infection may be prevented from developing into serious disease by raising the body resistance and by diminishing the strength or sizes of the infecting doses. Tuberculosis village settlements, such as Papworth at Cambridgeshire and Preston Hall at Aylesford, have demonstrated the feasibility of the idea. Papworth, established in 1916, is a colony or village settlement for tuberculous cases in the arrested or quiescent stage. The underlying idea is voluntary segregation. Training in some trade or craft is given while the colonist is under treatment or medical observation. Remunerative employment is offered, which enables the colonist to earn part of his income, the remainder being provided by the state as a subsidy. The colony provides at all times medical supervision and hospital facilities. Some of the colonists settle down with their families and remain for life. Thus, such a scheme provides medical care, remunerative occupation, and an optimistic atmosphere; the entire family may be supervised and the general public is protected.

In all countries, of course, general measures, such as education of the public, sanitary regulations, the encouragement of better living standards, etc., are not neglected. In the United States, the drastic method of separating children from their families is not acceptable; the development of colonies is in its infancy, and mandatory laws are not popular.

PRESIDENT'S PAGE

TO BE elected to the highest office within the gift of the medical profession in a great state is an honor we appreciate deeply and shall always treasure in memory's storehouse as the greatest event of our professional career. The presidency of our State Medical Association not only carries with it a great honor, but entails a weighty responsibility as well. Many problems press for solution. The officials can not of themselves make the work a success; the aid and support of the rank and file is an absolute necessity. Each individual physician should be a member of his county society, and passive membership will not suffice.

Only two things are necessary to make the medical profession in West Virginia the invincible force for good it ought to be—*organization* and *work*. Let each man, then, become affiliated with his local society, attend its meetings and participate actively in the work. It is our ambition to see the physicians more completely organized than ever before and functioning harmoniously. Our profession is essentially one of idealism, altruism and uplift, and in no way can we further our ideals more than by organization and activity. *Will you do your bit?*

Walter E. Vest

THE WEST VIRGINIA MEDICAL JOURNAL

JAMES R. BLOSS, EDITOR-IN-CHIEF . . HUNTINGTON

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¶ All original articles for THE JOURNAL must be made to it exclusively. Communications and items of general interest to the profession are invited from all parts of the state. Notices of deaths, removals from the state, changes of location, etc., are requested.

¶ Our readers are requested to send marked copies of local newspapers containing matters of interest to members of the medical profession. Name of sender should be given.

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EDITORIAL

The New Administration

On January 1, 1930, simultaneously with the appearance of this issue of the JOURNAL, Dr. Harry M. Hall of Wheeling will relinquish his duties as president of the West Virginia State Medical Association and will turn the reins of administration over to Dr. Walter E. Vest of Huntington, the new head

President Harry M. Hall, of Wheeling, whose term expired with the year 1929.

of the organization Dr. Hall has had an eventful and highly successful term of office, and he leaves in the hands of Dr. Vest the results of his splendid record of unselfish service.

To review briefly the events that featured Dr. Hall's administration one must point to the establishment of a state medical library, the publication of numerous articles by Dr. Hall in national periodicals and metropolitan newspapers, his appearance on the program of the American Medical Association conference of secretaries, the establishment of two new county medical societies, the increase in the Association's membership and the decrease in the Association's list of delinquents, and last, but not least, the building up of the Association's finances to a point where the Association is comfortably "well off."

Dr. Vest has had a wide experience in the affairs of the West Virginia State Medical Association and he will assume the duties of his new office well equipped. Dr. Vest has served for several years both on the publication board of the JOURNAL and as a member of the council from the fourth district. He has also served upon a number of important committees and is entirely familiar with the various details incident to the management of the Association. Because of his intimate knowledge of the problems of organized medicine in this state, and because of his past experience in the Association's affairs, a highly successful administration is predicted for Dr. Vest.

In looking back over the list of past presidents of the West Virginia State Medical Association, it becomes apparent that the office of president has

President Walter E. Vest, of Huntington, who assumed his new duties on January 1, 1930.

been filled year after year by men of the highest type—by men whose wisdom and foresight have guided the Association down through three successive generations to its present position of power and prominence. Dr. Hall has carried the Association to another milestone and has stepped back into the rank

and file. Dr. Vest now has the torch of organized medicine in his hands.

With this inspiring change of administration the JOURNAL wishes, on behalf of the entire membership of the West Virginia State Medical Association, to extend this little gesture of gratitude to Dr. Hall for his memorable administration, and to extend its best and kindest wishes to Dr. Vest for the coming year.

More Mail-Order Insurance

Several months ago a concern known as the World Insurance Company sent literature to a number of doctors in West Virginia in an effort to sell life and accident policies by mail. One of the letters of the World company was sent to the Association headquarters and the status of the company was taken up with the state insurance commissioner. The insurance commissioner reported that the World Insurance Company was a small and unstable institution, that it had no license to do business in West Virginia, and that, as a matter of fact, any resident who bought insurance from the World Insurance Company in this state was violating the state laws.

A number of other outside insurance companies that are not licensed to do business in West Virginia have started sending out literature during the past two months to doctors in this state. In some cases the literature is accompanied by a policy already made out in favor of the recipient, to be put in force upon receipt of a check by the insurance company. One company attempts to sell a non-cancellable automobile accident policy for one cent per day.

This is just another warning to the members of the West Virginia State Medical Association to give these mail-order insurance concerns a wide berth. If they have any financial standing and if they are licensed to do business in this state, they will not find it necessary to solicit patronage by mail.

Non-Spit Cigars

On or about the first day of December, 1929, many West Virginia doctors received telegrams from the Medical Publicity Bureau, room 305, 80 East Eleventh Street, New York City. The telegrams were all alike. They vaguely announced the beginning of some campaign against spitting, and each telegram requested the recipient to wire, collect, an endorsement of the campaign. The Charleston Chamber of Commerce and several officers of the West Virginia State Medical Association sent their telegrams to the Association headquarters in Charleston and an effort was immediately made to find out the motive behind the non-spit campaign.

A copy of the telegram was sent to Dr. Arthur J. Cramp, director of the A. M. A. bureau of investigation, and a few days later Dr. Cramp wrote that he would look into the matter. The bureau operated by Dr. Cramp lost no time in making its investigation, and the following report was recently received from the bureau director:

"I am now able," wrote Dr. Cramp, "to give you some information about the 'Medical Publicity Bureau.' The address given in the telegram that the doctors received—namely, Room 305, 80 East Eleventh Street, New York City—was merely a letter-shop for the Medical Publicity Bureau of 12 Nathan Davis Place. We learn, further, that Dr. William J. Robinson of *The Critic and Guide* is the principal stockholder in the Medical Publicity Bureau, and that a Miss Emilie Recht is a large stockholder. Miss Recht, in fact, is secretary and treasurer of the 'Bureau,' and is also said to be the business manager of *Medical Life*, published, it seems, by Victor Robinson.

"The 'president' of the Medical Publicity Bureau is said to be James MacBeth, who, it is claimed, is a graduate of Aberdeen University, Scotland. The advertising pages of *Medical Life*, it might be said in passing, reek with nostrums, the bulk of which have at one time or another been the subject of criticism in *The Journal of the American Medical Association*.

"In 1924 the Medical Publicity Bureau was operating from 13 Astor Place, New York, and, at that time, was sending out a questionnaire to physicians in the interests of 'Ivory Soap.'

"In 1925 the Medical Publicity Bureau was circularizing physicians on the question of the dietetic value of gelatin.

"In 1926 a physician wrote, stating that he had received a letter from the Medical Publicity Bureau at 12 Nathan Davis Place, New York, asking for his endorsement for a certain kind of shoe.

"Now, in 1929, they are trying to get physicians to express an opinion regarding the habit of spitting in public places.

"In view of the fact that one of the largest tobacco concerns is carrying on a campaign advertising one particular brand of cigars, which, they allege, are not spat on in the process of manufacture (the inference—a false one—being that other cigars are so treated), one wonders whether the Medical

Publicity Bureau's telegrams are not, in some way, tied up with this advertising campaign. Added strength is given to this supposition by the fact that *Medical Life* participated in the advertising campaign of 'Lucky Strikes,' put out by the same company as the one now advertising the non-spit cigar."

A more detailed report of the investigation of the Medical Publicity Bureau will be found in the December 7 issue of the *Journal of the American Medical Association.*

Thirteen Years of Service

Dr. Harry G. Steele, of Bluefield, has just relinquished his job as secretary of the Mercer County Medical Society after 13 years of continuous service. A record of this kind can not be passed unnoticed. Dr. Steele has served in various capacities both in state and county society work, and he has rendered valuable service to the medical profession in many ways, but his record of 13 years as a county society secretary is one that will stand high above all the rest.

It has often been said, and truthfully, that the success of any county society depends upon its secretary. With this in mind, the record of Dr. Steele is even more commendable. Unquestionably, the secretary of a county society does more downright work than all the other members put together, especially if he is a good secretary. Dr. Steele, as a county secretary, was one of the best, and it is pleasant to note that Mercer County Society gave him a rising vote of thanks for his untiring efforts on behalf of that organizzation.

ANNOUNCEMENTS

Dr. Churchill Robertson

Dr. Churchill Robertson, who for a little more than four years has been associated with Dr. Everett E. Watson at Mount Regis Sanatorium, Salem, Virginia, is now located at Philadelphia General Hospital as assistant resident physician. Dr. Robertson is taking a special course in heart, and after the completion of this course he expects to limit his work to diseases of the heart and lungs.

State License Revoked

At an executive session of the Public Health Council, held in Morgantown on November 28, 1929, the license to practice medicine in West Virginia, granted to Dr. Otto E. Fisher by examination on July 12, 1911, certificate No. 3919, was revoked.

Acterol Is Now Viosterol

Mead Johnson and Company, of Evansville, Indiana, has announced a change in the name of their activated ergosterol from Acterol to Viosterol. The change was made at the suggestion of the Council on Pharmacy of the American Medical Association, and Mead Johnson cheerfully complied with the council's recommendation. The product is now called Mead's Viosterol in Oil, 100 D, instead of Acterol, but the product is the same.

Dr. Stoner Now With Roche

Dr. W. H. Stoner, formerly director of the professional service department of E. R. Squibb & Sons, has joined the scientific department of Hoffman-LaRoche, Inc., of Nutley, N. J., according to a recent announcement. Dr. Stoner's' work in the field of biochemistry and laboratory methods, basal metabolism and diabetes have been widely reported, and from 1921 until 1926 Dr. Stoner was associate professor of biochemistry and diseases of metabolism at the Graduate School of Medicine, University of Pennsylvania.

Achievement Award

To that large and constantly increasing number of women seeking professional careers, the announcement by *Pictorial Review* that the winner of its annual Achievement Award of $5,000 for the year 1928 is Dr. Florence Rena Sabin, fellow of Johns Hopkins University and member of the staff of the Rockefeller Institute for Medical Research, will prove encouraging.

This award, which is now in its seventh year, is made annually to the American woman, by birth or naturalization, who, in the opinion of a distinguished committee, has made the most distinctive contribution of the preceding year to the fields of American art, science, or letters.

Dr. Sabin has received the award for her splendid contributions to medical science, which include a complete study of the nerve centers, the discovery of the origin and processes of the lymphatic system, the discovery of the development and processes of the blood cell, and the discovery of the functions of the monocyte, that white blood cell which bears so directly upon the study of the tubercular germ, and its effect on the human system.

Dr. Carson in New York

Dr. A. L. Carson, Jr., has been appointed resident in obstetrics at the Nursery and Child's Hospital, New York City, for a period of one year, beginning January 1, 1930. Dr. Carson, who was in practice at Gary, West Virginia, for several years, has been in New York, doing post-graduate work in obstetrics, for the past six months.

OBITUARY

R. A. Haynes, M.D., F.A.C.S.

Dr. Robert A. Haynes, of Clarksburg, one of West Virginia's most prominent physicians and surgeons, was instantly killed on the night of December 5 when the automobile he was driving skidded and crashed into a tree on the Clarksburg-Buckhannon road. Dr. Haynes was 62 years of age at the time of his death, and is survived by his wife and two daughters.

The deceased was chief surgeon at the St. Marys Hospital, Clarksburg, a fellow and director of the American College of Surgeons, and a fellow of the American Medical Association. Dr. Haynes affiliated with the West Virginia State Medical Association through the Harrison County Medical Society in 1909 and continued his membership until the time of his death. He was graduated from the College of Physicians and Surgeons of Baltimore in 1896, and was licensed the same year to practice his profession in this state.

The death of Dr. Haynes came as a tragic blow to his family and to his host of friends and admirers in West Virginia.

John G. Pettit, M.D.

Dr. John Garfield Pettit, superintendent of the Hopemont Tuberculosis Sanatorium near Terra Alta and former superintendent of the state hospital for the insane at Weston, died following a second operation for gastric ulcer at Clarksburg on December 20, 1929. Dr. Petit was *en route* to Hopemont from Ohio when he was taken suddenly ill. His condition was so critical that a stop was made at Clarksburg and an operation immediately performed.

Dr. Pettit was president of the West Virginia Tuberculosis Association and was widely known throughout West Virginia for his activities in the fight against tuberculosis. He served at Hopemont under three governors. Funeral services for the deceased were held at his former home in Weston, and interment was made in the Masonic cemetery there.

Dr. Pettit was born at Trimble, Ohio, in 1880. He attended the Illinois Medical College at Chicago and was graduated there in 1902, receiving his license to practice in West Virginia the same year. He affiliated with the West Virginia State Medical Association in 1909 through the Lewis County Medical Society, later transferring his membership to Preston county. He continued his membership from 1909 until the time of his death.

COUNTY SOCIETY NEWS

Ohio County

Dr. L. J. Karnosh, of Western Reserve University, Cleveland, Ohio, was the scientific essayist at the December 6 meeting of the Ohio County Medical Society, which was held at the Elks' Club in Wheeling. Dr. Karnosh read a most interesting and instructive paper on "Constitution in Mental Disease." Discussion on the paper was opened by Dr. C. A. Wingerter and Dr. A. L. Osterman.

Mercer County

The annual banquet and election of officers for the coming year were two of the outstanding features of the December 19 meeting of the Mercer County Medical Society, which was held in the banquet hall of the West Virginia Hotel at Bluefield. There were 20 members present at this meeting, together with a number of ladies and visiting doctors.

At the annual election, which followed the banquet, Dr. T. E. Vass, of Bluefield, was elected president for 1930, succeeding Dr. B. S. Clements, of Matoaka. Dr. P. R. Fox, of McComas, was elected vice-president; Dr. R. R. Stuart, of Bluefield, was elected secretary, and Dr. Harry G. Steele, of Bluefield, was elected treasurer. In relinquishing the office of secretary, Dr. Steele finished 13 years of service in that capacity with the Mercer County Medical Society.

A delightful program of entertainment was presented during the banquet, consisting of a series of dances by the Misses Sarah Osborne, Esther Graham, Emily Overstreet, Anna Mae Feuchtenberger, Anna Rogers and Betty Jane Feuchtenberger, pupils of the Ray Matz school of dancing. Mrs. Lyon M. Stadium (Ray Matz) also gave several solo dance numbers. A reading was given by Miss Edna Wilburn, while Mrs. Harry Ross rendered two soprano solos, with Mrs. Harry Holmes as accompanist. Mrs. Holmes also rendered a piano

solo. Mrs. H. G. Steele sang a Christmas selection, and as an encore rendered a little song entitled "Grandma," which she dedicated to Dr. Sam Holroyd.

The scientific program of the evening consisted of a paper on "Early Diagnosis of Placenta Prævia," with report of a case, by Dr. H. G. Steele, and a paper on "Coronary Occlusion," by Dr. E. F. Peters, of Princeton. Both of these papers were discussed at length by the members present, and the discussions were closed in a most interesting manner by the authors.

An amendment to the by-laws, which was tabled to be acted upon at the next meeting, was offered by the secretary as follows: "A meeting shall be held at 8 o'clock P. M. the third Thursday of every month in the year, or as near this date as thought expedient by the program committee." A second amendment was offered by Dr. Peters, which read: "Resolved, That the Mercer County Medical Society meets every other month."

Delegates to the state meeting at White Sulphur Springs next May were elected at the December 19 meeting as follows: Dr. W. H. St. Clair of Bluefield, Dr. B. S. Clements of Matoaka, and Dr. R. R. Stuart of Bluefield. Alternates will be Dr. David Littlejohn of Charleston and Dr. C. C. Ballard of Gap Mills. Dr. S. J. Kell, of Bluefield, was elected to the three-year term on the board of censors.

New committees for the year 1930 include Dr. A. H. Hoge, Dr. R. O. Rogers, and Dr. W. H. Wallingford, on the committee on professional relations. The meeting closed with a vote of thanks to the retiring secretary for his thirteen years of faithful service to the society.

H. G. STEELE, Secretary.

Barbour-Randolph-Tucker

The Barbour-Randolph-Tucker County Medical Society met in the Hotel Tygart at Elkins on December 12, 1929, with 16 members and one visitor in attendance. Following a dinner at the hotel, the usual business of the society was transacted. Dr. J. C. Irons, Dr. O. L. Perry and Dr. W. E. Whiteside were appointed a committee of three to prepare a suitable resolution on the death of Dr. W. W. Golden.

Dr. R. J. Condry, of Elkins, was elected president of the society for the coming year, to succeed Dr. C. B. Williams, of Philippi. Dr. W. E. Whiteside, of Parsons, and Dr. E. M. Hamilton, of Belington, were elected vice-presidents, and Dr. J. C. Irons was reëlected secretary-treasurer. Delegates to the state meeting at White Sulphur Springs next May will be Dr. E. M. Hamilton of Belington and Dr. Irons, with Dr. B. I. Golden, of Elkins, as alternate.

Other business matters attended to at this meeting included a resolution, which was passed, in favor of quarterly meetings in 1930, and a second resolution, which was also passed, fixing the 1930 dues at $12 per year. Dr. F. K. Lyon, Dr. Guy H. Michael, and Dr. S. G. Moore were appointed on the program committee for 1930, and Dr. J. L. Miller, of Thomas, on motion, was especially invited to attend the next meeting at Elkins in March, 1930, for a paper or a talk.

The scientific program consisted of a paper by Dr. Condry on "Diseases of the Heart," and a paper by Dr. S. G. Moore, of Elkins, on "Poliomyelitis," with a report of a case. These papers were freely discussed by Drs. A. S. Bosworth, R. J. Condry, A. P. Butt, O. L. Perry, B. I. Golden, and S. G. Moore.

On motion, and by unanimous vote, the following resolution was passed by the society:

"This society most emphatically protests against the precipitate repeal of the state medical defense policy of long standing, believing that the measure tends to prevent malpractice suits, by coöperation of its members, and that it influences many to become members for such common aid. We also feel that the action taken by the state society in repealing was hurried through precipitately without previous notice and before all the delegates had arrived. Evidently the fixed policies of the society should not be repealed without previous notice to all component societies."

J. C. IRONS, Secretary

Fayette County

The regular monthly meeting of the Fayette County Medical Society was held at the Hill Hotel, Oak Hill, on the evening of December 10, 1929. The annual election of officers was held at this meeting, and Dr. M. C. Borman, of Montgomery, was reëlected to serve as president during the year 1930. The three vice-presidents elected at this meeting were Dr. Robert Woods, of Oak Hill; Dr. J. Spinks, of Mount Hope, and Dr. G. G. Hodges, of Kilsythe. Dr. H. A. Walkup, of Macdonald, was reëlected secretary-treasurer.

Delegates to the state meeting next May at White Sulphur Springs were also named at the December

10 meeting, and the following were named to represent the Fayette County Medical Society: Dr. G. A. Smith of Montgomery, Dr. J. Spinks of Mount Hope, Dr. Frank Harkelroad of Harvey, and Dr. G. G. Hodges of Kilsythe. Alternates were Dr. Walter D. Simmons of Glen Ferris, Dr. Ralph Hogshead of Carbondale, Dr. Frank Van Pelt of Oak Hill, and Dr. Claude Frazier of Powellton.

Following the election, Dr. Borman briefly summarized the progress of the society during the past year. He stated that there had been a meeting each month throughout the year, and that the percentage of attendance had been high, ranging from 22 per cent to 45 per cent. He also pointed out that the largest attendance was at the August meeting at the Oak Hill Country Club, with a 70 per cent attendance. Dr. Borman said that the Fayette County Medical Society was the first society in the state to have 100 per cent paid-up membership in 1929, and that the total membership for the year had been increased about 5 per cent.

In taking up the other achievements and accomplishments of the Fayette County Medical Society in 1929, Dr. Borman said that all scientific papers read were prepared by the society membership, with the exception of the paper of Dr. Charles W. Burr, of Philadelphia, professor of neuropsychiatry at the University of Pennsylvania; that a silver loving-cup had been offered to the society during the year by Dr. William R. Laird, of Montgomery, as a memorial to his uncle, Dr. J. M. Laird, who formerly practiced in Montgomery and who was one of the original founders of this society.

The name of the Fayette county member presenting the best original paper during the year will be inscribed on the cup and awarded to him at the January meeting. The cup will be retained by that member during the year, until the next annual award is made. Dr. Walkup reported a substantial bank balance, and it was urged that the money be utilized to furnish film and other educational material for the society. The president also reported that steps had been taken toward procuring a moving-picture machine for the society.

The scientific program consisted of a brief but provocative paper by Dr. A. L. Morris, of Jodie, on "The Advantages of Physical Examination in Industrial Practice." This paper received the greatest amount of discussion accorded any paper during the year, and it was urged that similar papers be presented to the society during the coming year. Dr Gilbert O. Crank, of Lawton, presented a very brief paper on "The Post-Influenzal Heart," which was discussed by Dr. William R. Laird and Dr. Borman.

H. A. Walkup, Secretary

Grant-Hardy-Hampshire-Mineral

The regular meeting of the Grant-Hardy-Hampshire-Mineral Medical Society was held at Keyser on the evening of December 6, 1929. The scientific program of the evening was presented by Dr. Knight Reynolds, of Cumberland, Md., and Dr. M. H. Maxwell, of Keyser. Dr. Reynolds read a paper on "Eclampsia," and Dr. Maxwell's paper covered "Occiput Posterior." Both papers were highly interesting and brought out considerable discussion.

The election of officers for 1930 was held, and Dr. Thomas Bess, of Keyser, was elected as president to serve during the coming year. The vice-presidents elected are Dr. W. A. Flick, of Keyser, Dr. A. B. Johnson, of Franklin; Dr. James F. Easton, of Romney; Dr. O. V. Brooks, of Moorefield, and Dr. V. L. Dye, of Petersburg. Dr. T. C. Giffin, of Keyser, was reëlected to the office of secretary-treasurer. The delegates elected to attend the White Sulphur meeting next May were Dr. Thomas Bess and Dr. Walter Babb, both of Keyser.

The death of Dr. R. E. Lee, of Wardensville, a member of the G-H-H-M society, was reported at this meeting. Dr. Lee died on November 27 from carcinoma of the stomach.

T. C. Giffin, Secretary.

McDowell County

Dr. W. C. Hall, of Welch, was elected president of the McDowell County Medical Society at its regular meeting held on the evening of December 17, 1929. Dr. Hall will succeed Dr. D. D. Hatfield, of Yukon, who will turn over his duties with the new year.

Other officers named at the December 17 meeting were: Dr. R. C. Newkirk, of Twin Branch, vice-president; Dr. A. G. Rutherford, of Welch, secretary, and Dr. H. G. Camper, of Welch, treasurer. Delegates to the state meeting at White Sulphur Springs next May will be Dr. W. B. Stevens of Eckman, Dr. C. F. Hicks of Welch, and Dr. Rutherford of Welch. Alternates will be Dr. E. E. Vermillion and Dr. H. G. Camper, both of Welch. Dr. R. V. Shanklin, of Gary, was elected to the board of censors.

A. G. Rutherford, Secretary.

Mercer County

The Mercer County Medical Society met in the banquet hall of the Methodist Episcopal Church at Matoaka on November 19, 1929, after a delightful banquet was served in conjunction with the Kiwanis Club, with our president, B. S. Clements, in the chair.

Under clinical cases, Dr. Clements showed three cases of amputations, one, in a baby four weeks old, of the left hand, with five-tine fingers protruding at the wrist. The father of this child had an amputation of the left arm by a mine accident 14 years previously, and four normal children were born in this family prior to the birth of the one mentioned above. The third child was a girl about 13 years old, with a congenital amputation just below the left elbow.

Dr. M. B. Caldwell's seven clinical cases on "Cardiac Irregularities" were very well demonstrated, and some excellent points brought out in these very difficult internal medical patients. We hope to read of these reports in the medical journal in the near future.

Dr. W. D. Fitzhugh's report of the Interstate Post-Graduate Assembly at Detroit was very interesting. He spoke of the wonderful auditorium in which this meeting was held, of the 600 doctors present and the loud-speakers there in different parts of the auditorium, and how distinctly each speaker was heard throughout the meeting.

Dr. Fitzhugh also read a paper on "A Case of Potential Eclampsia," which gave some very good ideas on how to treat some cases of toxemia of pregnancy.

Dr. Ward Wylie, of Princeton, read an excellent paper on "Injuries and Dislocation of the Internal Semilunar Cartilage of the Knee." His description was most excellent, and one could almost see him operating on these cases.

Dr. A. E. Amick's paper on "The Factors Influencing the Development of the Nervous System in Infancy and Childhood" was one of the most excellent and all-around, complete and instructive papers ever read before the Mercer County Medical Society. He gave something to think about in the way of taking care of children while they were sick and the way to improve them when they are well and still not making the progress they should. He proved that pediatrics is a specialty and a branch of medicine by itself.

On account of the lateness of the hour, a motion was made by Dr. A. H. Hoge, seconded by Dr. R. O. Rogers, that a vote of thanks be extended to all who participated in the program and that a discussion of these papers be postponed until our next meeting.

Along with 17 members, the following doctors and some of citizens of the city of Matoaka were present: Dr. Hosmer, Bluefield; Dr. Echols, Matoaka; Dr. Turner, Springton, and 8 other visitors.

H. G. STEELE, Secretary.

Raleigh County

Dr. A. U. Tieche, of Beckley, was elected president of the Raleigh County Medical Society at the regular December meeting, which was held in the Presbyterian Church at Beckley on the evening of December 19. Dr. A. H. Bowles, of Glen White, was elected first vice-president; Dr. Ross P. Daniel was elected second vice-president, and Dr. W. W. Koiner, of Beckley, was elected secretary-treasurer. Dr. Koiner will succeed Dr. Ira M. Fisher, of Stotesbury. The new board of censors will consist of Dr. George P. Daniel of Glen Daniel, Dr. B. B. Richmond of Skelton, and Dr. E. H. Hedrick of Beckley.

The scientific program of the evening was furnished by Dr. Robert King Buford, of Charleston, who spoke on the subject of "Goiter" and who presented a number of interesting lantern slides. Dr. Buford also presented a one-reel moving-picture film pertaining to his subject. His paper was extremely interesting and was widely discussed by the members present. In addition to the scientific program, Mr. Joe W. Savage, of Charleston, state secretary, was also present and spoke briefly on the work of the state association.

Preceding the business and scientific program a sumptuous turkey dinner was served to the members of the society by the ladies of the church.

IRA M. FISHER, Secretary.

Kanawha County

The annual December banquet and election of officers of the Kanawha Medical Society was held at the Kanawha Country Club at Charleston on the evening of December 17, 1929, with more than sixty members in attendance. Dr. E. Bennette Henson was elected to serve as president in 1930, succeeding Dr. R. H. Walker. Dr. Ray Kessel was elected vice-president, and Dr. D. N. Barber, of Owens, was elected as secretary-treasurer to succeed Dr. Russel Kessel.

Delegates to the state meeting at White Sulphur

Springs next May were also named at the December 17 meeting of the Kanawha Medical Society, and the following were elected: Dr. G. H. Barksdale, Dr. C. E. Copeland, Dr. O. H. Bobbitt, Dr. J. R. Schultz, Dr. B. H. Swint, and Dr. D. N. Barber. Alternates will be Dr. Robert King Buford, Dr. U. G. McClure, Dr. G. G. Irwin, Dr. W. P. Black, and Dr. Hugh Robins. The new board of censors will consist of Dr. W. A. MacMillan, Dr. Wirt B. Wilson, and Dr. C. A. Ray.

The scientific program for the evening was presented by the state health department, with Dr. W. T. Henshaw, commissioner, in charge. Dr. Henshaw opened with a short talk on the general work of the department. Other speakers for the department included Dr. Carl F. Raver, of the vital statistics bureau, Dr. R. H. Paden of the child hygeine division, Mr. E. S. Tisdale of the department of sanitary engineering, Dr. David Littlejohn of the department of rural sanitation, Miss Dorothea Campbell of the publicity department, Dr. Elizabeth Parsons of the state laboratory, and Mrs. Ada McDermott of the department of venereal diseases.

This was one of the most interesting and best-attended meetings of the year.

Russel Kessel, Secretary.

Greenbrier Valley

Dr. H. L. Goodman, of Ronceverte, was elected president of the Greenbrier Valley Medical Society at its December 12 meeting, which was held at the Greenbrier Valley Hospital at Ronceverte. Dr. Goodman will succeed Dr. C. F. Mahood, of Alderson, who served during the year 1929. Dr. A. D. Ferrell, of Ronceverte, was elected as secretary-treasurer to succeed Dr. J. G. Leech of Quinwood. Dr. W. E. Myles, of White Sulphur, was elected vice-president of the society, and Dr. A. D. Ferrell and Dr. D. G. Preston, of Lewisburg, were elected as delegates to the state meeting next May.

The scientfic program of the evening was furnished by Dr. M. C. Borman, of Montgomery, president of the Fayette County Medical Society, who presented a paper on "The Relationship of the General Practitioner to Hypertension." Dr. Borman's paper was most interesting and was discussed by the members present. Following the presentation of the paper by Dr. Borman, Mr. Joe W. Savage, of Charleston, state secretary, presented the Jefferson College Hospital film on obstetrics.

The scientific program and election of officers was followed by a delightful luncheon served by the Greenbrier Valley Hospital.

PUBLIC HEALTH

A. P. H. A. Meeting

The fifty-ninth annual meeting of the American Public Health Association will be held in Fort Worth, Texas, during the week of October 27, 1930, with the Hotel Texas as headquarters, it has just been announced.

The annual meetings of this oldest and strongest of public health organizations bring together, for a week of scientific discussion, all of the public health leaders of the continent. It is always the most important health convention of the year. Health officers, nurses, dieticians, sanitary engineers, child and industrial hygienists—all of the specialists that make up the public health profession—meet to consider their common problems. Each of the ten sections of the association—Health Officers, Laboratory, Vital Statistics, Public Health Engineering, Public Health Nursing, Public Health Education, Food, Drugs and Nutrition, Industrial Hygiene, Child Hygiene and Epidemiology—arrange an individual program, and there are a number of general sessions to which the public is invited.

Detailed programs of the Fort Worth meetings will be announced in the official publication of the association—the *American Journal of Public Health and the Nation's Health*. Further information may be obtained from the executive secretary, Mr. Homer N. Calver, 370 Seventh Avenue, New York, N. Y.

Malaria Control Measures

An interesting summary of current malaria studies of the Public Health Service with special reference to control measures has recently been prepared. Reports indicate that, during the last three years, malaria has increased both in amount and in severity in the southern states. On the Atlantic seaboard, this increase is limited to the area south of North Carolina and in the Mississippi Valley south of Kentucky. Although the malaria rate has been steadily falling for many years, the reduction in 1925 was not very great and no apparent reduction occurred in 1926. In 1927 there was an upward trend, and in 1928 this became very marked.

The reporting of malaria is so incomplete and the various measurements of malaria prevalence are so inadequate that only the trend of the disease can be

indicated without being able to give exact figures. In areas where malaria is well reported, the reports of physicians show a very large increase in the number of cases; in a number of states the death rates have risen sharply. A few circumscribed epidemics have been reported and investigated in a number of states. Here and there the more severe forms of malaria have suddenly appeared. Several deaths from acute malaria have been reported.

During the last two years blood examinations have been made in a number of places. Infection rates varying from a little below 8 per cent to as high as 45 per cent have been found in blood specimens taken in the spring and late fall. One county in a rural section gave a rate of 33 per cent.

Malaria has always been heaviest in rural districts. Most malaria control work, however, has been urban. Heretofore the cost of controlling mosquito production in a town with a population of 1,000 has been about equal to the cost of controlling mosquito production about a single farmhouse. Rural inhabitants found this too expensive even to contemplate. Research in the field of malaria control has had, as its primary objective, a search for easier and less costly methods.

Recently there have been improvements in the drugs used in the treatment of malaria. However, it is not necessary to wait for the general wholesale use of any drug. Malaria can now be controlled in country districts by other means. Screens have been utilized by the well-to-do for years; but, because of their cost, they have not been put on the poorly built farm homes or rickety tenant shacks. The problem of screening such homes was attacked by the Public Health Service with gratifying results. The rural screening program developed by the Service is now in effect in five or more states, and was used in the post-flood public health work throughout the lower Mississippi Valley.

There is another method of attack against malaria —the prevention of the production of the malaria-carrying mosquito by means of paris green as a larvacide. The Public Health Service has devised an economical method of distributing this dust. An inexpensive gasoline-driven electric generator was used. This was wired to a light dust gun, which in turn is connected by a flexible hose to a simple dust hopper. The whole outfit can be carried along with an outboard motor in a light motor-car and can be set up by one man in a light rowboat. The dust gun creates a cloud of paris green and hydrated lime, the mixture used having a paris green content of 15 per cent. The dust drifts in the wind and is known to kill larvæ over 600 feet distant. This method has been successfully used with outboard motor speeds of 10 to 15 miles per hour.

One person, using the above outfit and a few laborers with hand-power knapsack dust guns, can prevent the production of mosquitoes from all or nearly all of the producing areas in a county at a cost within the reach of most counties.

The power duster is also in use on lakes impounded for hydroelectric purposes. Most of the ponds were cleared at great cost, leaving only a narrow rim of flotage at the shore line in which anopheles production occurred. This rim of flotage was removed during the breeding season by lowering the pond level at the commencement of summer, thus stranding the débris and leaving a clean mud bank. However, this fluctuation soon became too wasteful of power, and a compressed air-oil mixture was substituted. Now the power duster still further reduces the cost of shore-line control.

Still further studies to reduce the cost and promote the efficiency of malaria control are being conducted by the Public Health Service.

World Health Conditions

Surgeon General H. S. Cumming, of the Public Health Service, has recently submitted to Congress a report which summarizes in an interesting way the health conditions throughout the world during the past fiscal year. This report indicates that one of the important public health duties of the federal government is the prevention of the introduction and spread of infectious diseases in the United States from foreign countries. Due to the close relation of commerce to the public health in connection with the spread of epidemic diseases, it has been necessary for the Public Health Service to keep advised currently as to the prevalence of diseases not only in the United States but in so far as practicable throughout the entire world.

A constant interchange of sanitary information with other nations of the world was in effect through the International Office of Public Hygiene of Paris, the Pan-American Sanitary Bureau, and the Health Section of the League of Nations. Important epidemiological information was also received by the Public Health Service through American consuls, officers of the Service stationed abroad, and directly from foreign governments.

Any generalization as to the mortality rate for the world must be in relative terms, since the rate of

mortality varies so widely in different countries. For example, the death rate in India or China, or even certain European cities, is several times as high as that in the United States or in most European countries—a fact that in itself constitutes impressive evidence of the results of modern medicine and public health administration.

There occurred in the winter of 1928-29 an epidemic of influenza which, although mild as compared with the epidemic of 1920 and the pandemic of 1918-18, reached a large part of the countries for which mortality records are available. In the United States the epidemic began on the Pacific Coast as early as October, 1928, with a peak of the reported cases early in December, and gradually spread eastward with the peak of cases in the New England states about six or seven weeks later. From June to November, 1928, outbreaks had appeared in several Pacific Islands. In fact, in the late spring of 1928 there occurred, in the United States, a considerable number of influenza and pneumonia deaths in excess of the normal expectancy.

The epidemic appears to have reached its peak in most European countries in February, 1929, one or two months later than in most of the states of the United States. The first outbreaks reported in Europe were in Ireland in September, coming to a peak in November, but Ireland suffered a secondary wave in February, when the disease was at its height in the remainder of Europe. The attack rates varied widely from one region to another. In some places the general death rate (all causes) was scarcely affected; in others the maximum weekly death rates were very heavy. These death rates exceeded somewhat the highest rates in American cities. In England and Wales the death rates were the highest since the 1918 pandemic, but in the Soviet states, Austria, Hungary and Switzerland the recent peaks were considerably below those of the epidemic which visited certain European areas in 1927.

Cerebrospinal meningitis was unusually high in the United States during the last half of 1928 and especially during the early part of 1929. Up to the beginning of 1929 there was no undue prevalence of the disease in European countries, but in April and May of 1929 there was more than the normal number of deaths from this disease in England and Wales, Scotland, Germany, and Italy. In the last preceding high period (1915-18) the disease appeared in Europe earlier than in the United States, but the reverse was true in the present period of high prevalence.

There was in the fall of 1928 an epidemic of plague in India, particularly in the Bombay Presidency, which was the most severe since 1923. In the early months of 1929 the plague situation in nearly all parts of the world appeared to be more favorable than in previous years. The disease did not occur on vessels arriving at United States ports during the year, although it continues to prevail in certain South American countries, and during the fiscal year it appeared in Argentina, Brazil, Ecuador, Perú, and Uruguay.

A considerable number of cases of cholera occurred in India during the year. In such a disease as cholera, which occurs in great epidemics, a single year's record has little significance so far as the trend of the disease is concerned. Considering the various years, there has been a noteworthy decrease of cholera in India during the past ten years.

Yellow fever was reported in Brazil during the year, a severe outbreak occurring at Rio de Janeiro. At the close of the fiscal year the outbreak appeared to be under control, but at that time the disease was reported in the interior of Colombia. These occurrences prove that, notwithstanding the progress which has been made in the fight against yellow fever, constant vigilance is still necessary to prevent this scourge from again securing a foothold in the United States.

Sickness Among Industrial Employees

During the past nine years a group of approximately 35 sick-benefit associations in industry has reported to the United States Public Health Service the cases of illness and non-industrial accidents causing disability for eight consecutive calendar days or longer among its members, and the monthly number of male and female members. These reports have been analyzed once a year and the results have been made public from time to time by the Public Health Service. This material has afforded measurement and evaluation of several important factors affecting the frequency of different diseases and disease groups in a sample of the industrial population. It is realized, however, that a need also exists for some sort of current index of illness so that attention may be directed to the changing morbidity picture and preventive effort mobilized to reduce the incidence of those disease which are causing the greatest impairment to the health, vitality, and efficiency of the adult occupied population as indicated from the recorded sickness experience of a sample of that population.

A report recently published by the Service represents the first attempt to provide fairly current information on industrial morbidity. It was hoped that the sickness rates could be presented soon after the close of the first quarter for 1929, but tardy claims for sickness benefits, deferred diagnoses, and other reasons delayed the reports to the Public Health Service.

An increase of 38 per cent, compared with the first quarter of 1928, is shown in the incidence rate of disabilities lasting more than one week. For the respiratory disease group an 86 per cent increase in frequency is indicated, due, of course, to the influenza epidemic which was still raging in the early part of this year. Influenza itself was 163 per cent more frequent than in the same period last year. The pneumonia (all forms) rate was only 28 per cent above the rate of a year ago. Deaths in the industrial population of the United States and Canada followed the increased frequency of sickness. A large life insurance company reports an increase of 18 per cent in the industrial death rate in the first quarter compared with the same part of 1928. The mortality rate appears to have been higher than during the first three months of any year since 1920. The combined influenza-pneumonia death rate showed an increase of 88 per cent over the rate in the first quarter of 1928. Disabilities which lasted more than one week on account of influenza and pneumonia in our sample of the industrial population increased 147 per cent.

Sickness from non-respiratory diseases as a whole occurred at much the same frequency in the two periods.

BOOK REVIEWS

Strictly Private

It is not often one runs across a book like "Strictly Private," by Dr. Maurice Chideckel. On the title page are the following collection of words: "Being the intimate diary of a medical practitioner," and "Should the Doctor tell?" Well, I am telling. The book is dedicated to his daughter, Vivian Lottie Chideckel, and is published by The Stratford Company, Boston, Massachusetts. The price is $2.50 and the book was copyrighted in 1928. We confess it may be old to many readers, but it has just been bought by us from the bookseller. It is beautifully bound and well printed, with a cover on it upon which is scrambled "Strictly Private."

To give an opinion about it becomes no simple matter, as the book happens to be in a strange classification by itself. Here is the whole year of a doctor's life—general practitioner, too. It is divided into chapters of the years and there is a recording for each day. You have read a number of books about a doctor's life, often written in dripping terms of sentimentality. You have never read one like this at all. The book is on the stands to be purchased by the laity, and yet you will find short, clear-cut descriptions of almost all the common diseases and many that are not common. Hodgkin's disease, aneurysm, tabes, subdural hemorrhage, whooping cough, and Addison's disease are presented in a way you will never forget, and all by way of anecdotes that could well nigh be called classical. We should say that there is more actual clinical data in this book than in many medical manuals.

Picked up at random are many other amazing recitals. The meeting of the girl who had come to have an abortion done, and, while she was there, the wife of the married man who was the father of her child coming in with an infantile uterus, sighing for a child she could not have. A conference between the two and a settlement—the only danger, as the doctor remarks, would be if the husband took his wife to another doctor for examination. The episode of giving the anesthetic to the idiot who would be better off dead. The call to the little boy with the diphtheria. A drunken revelry going on in another room. Tracheotomy with a penknife. Administration of antitoxin. Some drunken sot yelling out, "He cut your boy's throat and is now sticking him with a needle." The murderous charge by the father. The doctor jumping out of the window. The boy lived. The chiropractor who sued him for telling a patient with locomotor ataxia that the irregular could do him no good. The Gentile who would not take barium sulphate for heart block because he found out it was introduced by Cohen and Sevine, and "606" stopped on a relative because Ehrlich was of the same race. The man who wanted to marry his cousin. The child who was being taken out to the doctor's car with acute appendicitis and the neighbor put in an objection and caused a refusal and ultimate death of the child. The Lithuanian whose death was accurately predicted and all the others came around to see when they were going to die. The Italian who seemed to arise from the dead and then the doctor received numerous calls from other stations to come and see if their dead were dead.

It is safe to say you never had a problem that is not covered in this book in a few sentences. Furthermore, every interne who expects to go out into the world soon should have this book. We could have saved ourselves a lot of worry if we had possessed it. It meets and decides all our problems with amazing humanity. We can scarcely conceive of a doctor who would not enjoy and prize this book. Every doctor has had exceptionally queer experiences formed out of every-day contacts with his patients. Here are over 350 of them. The clinical side i informative. The ethical side is as practical as is possible. The anecdotes about the cults and fakirs is worth the price of the book.

The only puzzling thing about it is, what will the laity say when they read it? The intelligent will learn to see more about a doctor and what he has to deal with than they ever did before in their lives. I fancy nothing in years could better instruct them. About the morons, one can't say. That is too learned. If you have any money left over at Christmas, be sure to give yourself this treat at once. You will learn more about medicine than you have learned at some conventions or from some of your recent textbooks.

Outline of Preventive Medicine

OUTLINE OF PREVENTIVE MEDICINE (Paul B. Hoeber, Publisher, New York; 1929).—The foreword gives concisely the reason for this small volume: "Prevention of disease involves at least two lines of action, one preventing the contraction of certain diseases, the other preventing the development of serious symptoms of the disease contracted." With this point of view, practically every disease, medical, surgical, etc , has a short paragraph concerning it.

The contributors consist of twenty-one of the best-known practitioners in this country, and what each has to say is authoritative.

The volume is purely a quick reference book, but there are two especially interesting articles, one on "Periodic Health Examinations," by Harlow Brooks, and the other on "Industrial Disease," including physical examinations prior to employment and after accident or disease prior to reëmployment.

It would make a handy addition to any library.

The Medical Museum

THE MEDICAL MUSEUM, Based on a New System of Visual Teaching by S. H. Daukes, Director, The Wellcome Museum of Medical Science; size 10 by 7 inches, 172 pages (The Wellcome Foundation, Ltd., Endsleigh Court, 33, Gordon Street, London, W. C. 1, England).—This book is not merely a theoretical contribution to the improvement of museums in general and medical museums in particular, but a description of practical achievement based upon theory and vision.

The author is precise, clear, and has obviously devoted much study, skill and care to a subject on which this book stamps him as an expert. Having, in the first chapter, discussed the functions of a medical museum and made a plea for reform and for a wider outlook, Dr. Daukes proceeds in subsequent chapters to describe and discuss the details of the new system of visual teaching on which the ideal medical museum is based.

This is followed by appendices dealing with the application and development of the system, with types of buildings, walls, screens, cases, labels, illustrations and technical details of preserving and mounting specimens. In conclusion there is a very valuable and complete bibliography of technical museum publications and 45 whole-page illustrations of screens, sections and specimens which are most helpful as providing practical evidence of the soundness and practicability of this new system of visual teaching.

The letterpress is in large, easily read type, and the typography gives an air of distinction to the publication which is further enhanced by the technical perfection of the photographs of difficult subjects and the high quality of the halftone reproductions.

Every one interested in museums, whether in regard to construction, development, control or use, should read and study this book. Having done so, there will be a natural desire to see its methods developed in actual practice, which, fortunately, is possible for all those who can visit The Wellcome Museum of Medical Science, 33, Gordon Street, London, England, of which Dr. Daukes is director.

CURRENT COMMENT

A Tribute to the Profession

In this age of wrangling criticism it is quite comforting to read an occasional tribute to the medical profession, especially when such a tribute appears in the lay press. The Charleston (W. Va.) *Gazette* has recently had a word of commendation for the doctors. In an editorial concerning some new discovery, the *Gazette* said in part:

"When we feel at all inclined to give heed to the

current criticisms of the high cost of scientific medical treatment, there comes a tug at the heart warning that here is a subject and an area in which the tyro may not rush lest the noble professions of physicians and nurses be discouraged. Few of them are in the millionaire class, and yet then can stand upon the goal line of achievement and claim, with reason, that their profesions have advanced the cause of health and cure, within the last 60 years, more than was done in the world's whole history preceding. That is sure ground conservatively described. The hospitals, the Red Cross, the nursing associations, the managers of school clinics—in fact, all the charitable institutions—know that money is not the sole incentive to the vast majority of physicians who have been, and are now, conquering disease, performing operations deemed impossible a few years ago, and searching for and isolating dangerous germs and preparing the antitoxins that render them harmless.

"Who does not remember the courage and self-sacrifice of the physicians who, in 1918, when flu in its most virulent form attacked the people by the thousands? Who does not know of cases where the most skillful surgeons have performed operations regardless of the chances of remuneration? The physicians are managing their affairs as do lawyers, engineers, and experts.

"Those able to pay are charged, not exorbitantly but enough to keep an up-to-date surgery in a healthy financial state. This is the application of the well-known rule of charging off losses. Every sound financial statement shows net after charging off bad debts and losses.

"Professional men are entitled to their fees. They are justified in having a schedule that provides for those cases where the patient can not pay the schedule fee. But the physicians have a good record, here and up in heaven, for relieving suffering and for doing all that modern thought requires in preventing disease."

Clinics That Fly

There have been published in various medical journals at various times predictions as to the future value of airplanes in the practice of medicine. In time the use of airplanes will no doubt bring about a number of changes in both medical and hospital work. The airplane is already being used to some extent, especially in ambulance work.

A new use for the airplane will be employed by the Pan-American Medical Association early in 1930, when a "flying clinic," with medical personnel and equipment for demonstrations and lectures will visit eleven Central and South American countries. A report of this unique expedition appeared in the December 20 issue of the New York *Times* as follows:

"A unique expedition, described as 'the flying clinics of the Pan-American Medical Association,' will set out from Miami on January 24 with medical personnel and equipment for demonstrations, lectures and even operations in eleven Central and South American republics. The journey over 6,808 miles of seas and mountains is expected to require only thirteen days.

"This experiment in modern medical research and education, it was learned, had its origin in a discussion of plans being made by delegates to attend the second annual congress of the Pan-American Medical Association, which opens in Panama City on January 30 and at which the latest developments in medicine and surgery, drugs, hospital equipment and supplies will be shown.

"For the benefit of Latin-American doctors who will be unable to attend the gathering, it was decided to present a flying edition of the congress.

"After leaving Miami, stops will be made at Havana, Cuba; Merida, Mexico; Belize, British Honduras; San Lormazo, Tegucigalpa and San Salvador, Honduras; Guatemala City, Guatemala; Managua, Nicaragua; Puntarenas and San José, Costa Rica; Panama City, Panama; Cartagena, Columbia; Barranquilla, Colombia, and Caracas, Venezuela. On the return trip, stops will be made at David, Panama; Managua, Nicaragua; Tela, Honduras, and Cozumel Island, off the coast of Yucatan.

"Territory which would have required months to traverse in pre-aviation days will be visited by the flying clinics. Upon landing in the various airports the medical group will be met by government officials and escorted to convenient locations where patients afflicted with the illnesses peculiar to their climes will be subjects for study.

"The personnel of the expedition will include Dr. William Sharpe, president of the Pan-American Hospital and Clinics; Dr. Charles Murray Gratz, Dr. George W. Hawley, and Dr. Fred H. Albee, orthopedic surgeons, all members of the Pan-American Medical Association, and two other physicians or surgeons to be selected. Dr. Sharpe will hold clinics in neuro-surgery, while Dr. Gratz, Dr.

Hawley and Dr. Albee will demonstrate the treatment of fractures and other bone surgery.

"Panama City will be reached on the afternoon of January 30, and five days will be spent at the congress, which closes on February 5. The schedule allows for the return to Havana on February 10.

"The expedition will fly over the scenic route of the Pan-American Airways in a Sikorsky amphibian plane. Basil Rowe and S. F. Whalton have been selected to pilot the group over the rugged territory. The plane will be of the same type used by Colonel Lindbergh when he laid out the route, and will be chartered by the Pan-American Medical Association."

HOSPITAL NEWS

Annual Hospital Meeting

The fourth annual meeting of the Hospital Association of West Virginia was held at the Kanawha Hotel in Charleston on December 2, 1929, with approximately fifty members and visitors in attendance. This meeting marked the retirement from the office of president of Dr. R. A. Ireland, of Charleston, and the installation of Mr. J. S. Turk, of the Ohio Valley General Hospital, Wheeling. Mr. Turk will serve during the year of 1930.

The annual election of officers, which was held at the conclusion of the afternoon meeting, resulted in naming Dr. B. I. Golden, of the Davis Memorial Hospital, Elkins, as president-elect; Dr. Walter E. Vest, of the C. & O. Hospital, Huntington, as first vice-president; Dr. A. G. Rutherford, of the State Hospital No. 1, Welch, as second vice-president, and Mr. Joe W. Savage, of Charleston, as secretary-treasurer.

The December 2 meeting, which was one of the best in the short history of the Hospital Association, opened with the invocation pronounced by Dr. H. M. Brown, of the St. Luke's Episcopal Church, Charleston, and the address of welcome by Hon. R. A. McKee, representing Mayor W. W. Wertz of Charleston. Dr. B. I. Golden responded to the address of welcome. Dr. Ireland then delivered a most excellent presidential address, in which he reviewed in part the work of the Association during the past year. The morning session was concluded by Dr. A. G. Rutherford, who read an interesting and instructive paper on "What the Surgeon Expects from the Hospital."

The afternoon session was opened by Dr. Bert W. Caldwell, executive secretary of the American Hospital Association, of Chicago, whose subject was "Hospitals." He was followed by Dr. W. S. Fulton, president of the staff of the Ohio Valley General Hospital, Wheeling, who read a paper on "Should Hospitals Receive State Aid?" The scientific program was brought to a close by Mr. F. E. Green, of Cleveland, with the hospital division of the Ohio Inspection Bureau, who spoke on "Hospital Hazards." All three of these papers provided excellent material for discussion and showed the results of extensive study and thought. The scientific papers were followed with the annual report of the secretary-treasurer and the election of officers.

The convention banquet was held at the Kanawha Hotel that evening, with thirty-two members in attendance. Dr. Walter E. Vest, of Huntington, president-elect of the West Virginia State Medical Association, served as toastmaster. Speakers for the evening included Dr. James McClung of Richwood, Miss Martha M. Russell of the Camden-Clark Hospital, Parkersburg, Dr. Robert King Buford and Dr. W. A. MacMillan of Charleston, Mr. J. S. Turk of Wheeling, Hon. Lee Ott, workmen's compensation commissioner of West Virginia, and Mrs. Katherine Trent, of Charleston.

Wheeling Hospital

Construction work on the new building for the Wheeling Hospital is moving along rapidly and the steel work for the center wing is already up. The two portions of the hospital will be connected with a unique passageway, and, when completed, the hospital will be one of the most modern in the state. The manner in which Sister Xavier has contrived to smoothly operate the hospital while the necessary inconveniences of construction have been going on has merited a great deal of commendation. In other days, so radical a tearing down of buildings and alterations would have made cessation of service necessary.

FROM OTHER JOURNALS

Not One Practicing Physician Invited!

An interesting exhibition of the laity's delusions of grandeur in point of medical knowledge was displayed when President Hoover's committee was announced for work on the question of the health and protection of children. Only those medical men were included whom it would have been a direct cabinet and political insult to omit. Neither the American Pediatric Society nor the American Medical Association were asked to coöperate. Significant,

however, is it that the list includes the editor of a "woman's magazine" that made one of its greatest circulation drives by a campaign for "better babies," and the president of the American Federation of Labor, as well as a mining engineer and a member of the committee for improving the conditions of the poor.

The President's committee for the determination of the facts "as to the present progress and future need for the health and protection of children" met on July 29 at Washington, D. C. The President announced that "a series of committees will be appointed from the *leaders in national organizations*." Medical organizations evidently do not count with Mr. Hoover.

Just what may be expected, doctors will not have a hard time in guessing.

As stated in the October number of the *Bulletin* of the St. Clair County Medical Society:

"By the President's committee the subjects to be studied embrace regular medical examinations, school or public clinics for children, hospitalization, adequate milk supplies, community nurses, maternity instruction and nurses, teaching of health in the schools, facilities for playgrounds and recreation, dependent children, child labor, and scores of allied subjects. A sum of $500,000.00 from private sources has been placed at the disposal of the President to cover the expenses of the preliminary committees, the conference and the follow-up work which will be required to carry out its conclusions. The work of the conference will be under the direction of the secretary of the interior, Dr. Ray Lyman Wilbur, with the coöperation of the secretary of labor, James J. Davis. The members of the committee comprise a chemist, a commissioner of food and drug inspection, a mining engineer, an executive secretary, the director of the Children's Bureau at Washington, a member of the National Amateur Athletic Association, a member of the Association for Improving the Conditions of the Poor, a judge, a superintendent of schools, the director of the American Child Health Association, the surgeon general of the Metropolitan Life Insurance Company, the president of the American Federation of Labor, the editor of the *Woman's Home Companion*, a staff member of the *Herald Tribune* of New York, a member of the department of child welfare of World's W. C. T. U., a social economist, a member of the National Health Council of New York, a member of the Bureau of Home Economics of the Department of Agriculture, a former congressman from Virginia, a past president of the American Pedriatic Society, a state health commissioner, and two private citizens not listed as affiliated with prominent national organizations. In all, the committee comprises sixteen men and eight women.

"It is surprising that President Hoover has not shown more recognition of any organized medical group in his choices."—*Illinois Medical Journal.*

Dr. C. Jeff Miller

One of the best-known surgeons in the city of New Orleans has just been honored by election to the office of president of the American College of Surgeons. Dr. C. Jeff Miller, upon whom the College has seen fit to bestow its greatest honor, has practiced for many years in this city. He has made a reputation for himself second to none as a surgeon of exceptional merit, a teacher of renown and distinction, and an earnest and whole-hearted participant in the activities of the medical profession. The *Journal* extends its heartiest congratulations to Dr. Miller, and feels that, in his election, not only has a charming and distinguished southerner been honored, but that also the high standing of the medical profession of the South has been recognized and the city and state in which he resides will shine in the reflected glory of this election. New Orleans and Dr. Miller are doubly complimented, because at times these elections, to a certain extent at least, depend upon geographical availability, and it was only several years ago that our Dr. Rudolph Matas was similarly honored. Despite this fact, the distinction of heading a great surgical society was conferred upon this able representative of the New Orleans and Louisiana profession, Dr. Miller.—*New Orleans Medical and Surgical Journal.*

Newspaper Medicine

At first thought it may seem a matter of small moment to medical men whether the general public is informed with regard to the advances of medical science or not, but we believe it is of more consequence than is generally believed by physicians; for the more intelligent people come to know of the splendid achievements of modern medicine and surgery, the less likely it is that they will waste their money on quacks and impostors.

The semiquack method of inviting reporters to medical events for the purpose of exploiting the selfish interests of schools and individuals should receive the severest condemnation from reputable

medical men, who, if they would, could act to some purpose through medical societies.

It would seem worthy of the consideration of those in charge of reliable daily papers, of which, fortunately, there still remain a number, that they employ an honorable, conscientious physician to look over the material pertaining to medicine which is submitted for publication, and to furnish occasional news notes and editorials on suitable subjects of general interest.—*Pennsylvania Medical Journal.*

Protesting Vivisection

It has often been noted that the antivivisectionists are not troubled by the frightful suffering and deaths of animals caused by hunters, pigeon shooters, fishermen, dealers, etc., by poor stables, by cold, exposure, and filth in shipment and slaughtering, and in many similar ways. We wish to add another great class of vivisection practices which seem to have escaped mention and against which, so far as we know, no protest has been raised by the self-appointed friends of animals.

We would not be far wrong if we should place the number of castrations of domestic animals in the entire country at present at a little less than 100,000,000 a year. When one considers that no anesthetic is ever used in these 100,000,000 cases; that the operator is usually without any knowledge of anatomy or antisepsis; that the operation, a "major" one when carried out upon man, is here brutally done and with much unnecessary attendant and consequent suffering; and, lastly, when one compares the tremendous sum total of this suffering with the infinitesimal amount in laboratories—then indeed one must recognize that, as we have before said, it is not suffering but anti-science that stimulates the antivivisectionist. If the societies for the prevention of cruelty to animals were genuinely working for the cause implied in their title, every physician in America would be a member and a helper. Curiously enough, while the S. P. C. A. has done nothing to prevent or alleviate the annual 100,000,000 vivisections to which we refer, veterinary colleges (hated by the antis), by educating veterinary surgeons in scientific methods, are vastly lessening the evil callously ignored by the official sentimentalist.—*Pennsylvania Medical Journal.*

Blood Donors

In March, 1926, the blood transfusion committee of the Community Council, St. Louis, was organized at the suggestion of Dr. J .J. Singer, who read of the establishment of such a service in London by the Red Cross. The purpose is to secure a central blood donors' list to be used by physicians and hospitals needing the services of such donors.

At a meeting of the committee on November 15, 1929, a report was given by the chairman. The report states that at the present time there are 86 donors on the list. During the three years that the transfusion committee has operated, 340 transfusions have been given by 122 donors. Seventeen different hospitals have used the service. While 26 transfusions have been given free of charge, it is the policy of the committee to pay $25 for each transfusion of 500 c.c. of blood. Donors called but not used after making the trip to the hospital are paid by the hospital or the patient for the time consumed.

The central donor list is filed at the Central Directory for Nurses, where calls for donors are received. This organization coöperates with the committee by connecting the donor with the hospital where his services are needed. At the office of the Community Council applications of prospective donors are received and instructions given for the necessary examinations and blood typing. The laboratories giving their services without charge for blood grouping and Wassermann tests are those at Barnes Hospital, Barnard Free Skin and Cancer Hospital, City Hospital, Jewish Hospital, St. Louis University Medical School, and St. Luke's Hospital. Usually each hospital has an additional list of donors, composed, for the greater part, of students.

The Police Department has a donor list made up of men from their department who are available for cases of policemen and their families.

Since March, 1926, the students of St. Louis University Medical School have been giving their blood free for transfusions for the indigent poor in the various hospitals of the city. Each year the sophomore class volunteers its services. The agency for the administration of this service is the Student Health Service of the university. The students have their blood grouped and tested, and are physically examined by the Student Health Service to determine their fitness to give blood and also to protect them from injury to their own health by giving blood when they are not physically able to do so. To determine a donor's fitness the records of the Student Health Service are utilized, and, when indicated, a special physical examination is made. Calls for service of this sort are handled through the office of the Student Health Service. Forty-five trans-

fusions have been given by the students.—*Missouri Medical Journal.*

Medical Facilities

The Committee on the Cost of Medical Care has issued "A Survey of Statistical Data on Medical Facilities in the United States," from which the following facts are obtained:

Perhaps the outstanding fact regarding medical facilities in the United States is that there are approximately 1,500,000 persons estimated to be employed in connection with the care and prevention of illness. This includes physicians of all types, dentists, nurses, hospital superintendents and personnel, pharmacists, laboratory personnel, etc.

There are in the United States more physicians per 100,000 people than in any other country in the world. The number of doctors has not increased as fast as the population, but it does not follow necessarily that there is an inadequate supply. Improved transportation, the growth of office practice, and many other changes may have more than counterbalanced the decreased ratio of physicians to population. The sufficiency of physicians is affected by their geographical distribution. In South Carolina and Montana, two years ago, there were 71 physicians to every 100,000 people, while California had 200. The survey shows cities relatively oversupplied, whereas smaller communities are relatively undersupplied. Over 19,000 doctors limit their practice to a special field in medicine, and 20,000 others practice a specialty but do not limit themselves to it. At least 11% of doctors are employed on a full-time salary.

Hospital beds have increased from 421,000 in 1909 to 890,000 in 1928. There are 7,000 hospitals in the United States, and the daily average of patients is about 700,000. Over 40% of counties in the United States have no hospitals for general community use. The general, state and local governments provide considerably more than one-half of the hospital facilities. Clinics have increased from 600 in 1910 to 6,000 in 1926.—*Nebraska Medical Journal.*

Periodic Examinations

Considerable effort is being made in other states to popularize the idea of periodic health examinations. Only sporadic and indifferent attempts to inaugurate this custom have been observed in this state. Perhaps the profession has not yet been convinced of its value to the people or to themselves, although the people have, to some extent at least, accepted the proposition and are taking themselves to various clinics and hospitals for just such examinations.

This is unfortunate, for it really defeats the purpose of the plan in which it is intended that the examinations should always be made by the family physician, to whom the person would properly go for advice or treatment should the examination discover anything abnormal or pathologic.

These examinations must be considered in the line of professional service for which the doctor is entitled to a fee—a fee that is commensurate with the time and effort and skill required. It should be at least equivalent to the fee paid by insurance companies for similar service. But there's the rub. Physicians are disinclined to advise the apparently healthy members of a family, in which their services have sometimes been required, that they should come to them once each year for an examination for which the fee will be five or perhaps ten dollars.

That is too much like soliciting business, to which most doctors are averse, and which they have been taught is unethical. However, it must be conceded that periodic examinations of the apparently well is a conservative measure of considerable value to the community as well as the individual, and since the organized medical profession has undertaken to sponsor the campaign, it is up to us to so popularize the idea that the people will go to the doctor for these examinations without being solicited by him.

This can best be accomplished by the county societies, and the plan adopted by these organizations should contemplate the holding of one or a series of health clinics by each society, at which all of the members should assist, and at which all applicants will be examined free of charge. The record of the examination should be given to and retained by the family physician of the applicant. This courtesy should be observed whether the family physician mentioned by the applicant is a member of the society or not. The examination should be conducted by the family physician if he is in attendance at the clinic. Except at these clinics these examinations should be made only by the family physician, and at a uniform fee to be agreed upon by the members of the society.

One or two such free health clinics conducted by each county society in the state should sell the idea to the people, if it is salable. The purpose, and the time and place at which these clinics are to be held, should be very thoroughly advertised, preferably by

display advertisements in the county newspapers, several weeks before the date set. The expense of such advertisements will be a very good investment and will tend to gain the coöperation much needed in this kind of work.

It would greatly increase the effect of this campaign if it could be made state-wide, and if all of these clinics were held on the same day. An effort will be made to arrange for something of this kind if no better suggestions are offered.—*Kansas Medical Journal.*

GENERAL NEWS

Southern Medical Meeting

From word brought back by those who attended the twenty-third annual meeting of the Southern Medical Association in Miami in November, it was one of the most successful and brilliant gatherings in the history of that organization. The November meeting was of particular interest to the members of the profession in West Virginia. Dr. Thomas W. Moore, of Huntington, was president of the Southern Medical Association during the past year and presided at the Miami meeting. His presidential address was termed a masterpiece by all who heard it, and was one of the outstanding features of the convention.

There were two other features of the Miami meeting that reflect considerable credit upon West Virginia. First was the elevation of Dr. Walter E. Vest of Huntington, president of the West Virginia State Medical Association, to the office of council chairman. Second was the excellent paper on goiter delivered before the general session by Dr. Robert King Buford of Charleston.

Included in the registration of the Miami meeting were the names of the following West Virginia doctors:

Dr. W. E. Cook, Pageton; Dr. George W. Johnson, McAlpin; Dr. R. S. Spray, Morgantown; Dr. James R. Bloss, Huntington; Dr. C. N. Brown, Swandale; Dr. Robert King Buford, Charleston; Dr. W. C. Camp, Spencer; Dr. I. D. Cole, Clarksburg; Dr. U. L. Dearman, Reedy; Dr. M. L. Dillon, Charleston; Dr. L. V. Guthrie, Huntington; Dr. F. C. Hodges, Huntington; Dr. Arthur K. Hoge, Bluefield; Dr. G. S. Howard, Huntington; Dr. J. E. Hubbard, Huntington; Dr. George D. Jeffers, Parkersburg; Dr. John P. Lilly, Morgantown; Dr. T. W. Moore, Huntington; Dr. William M. Sheppe, Wheeling; Dr. Eldon B. Tucker, Morgantown; Dr. Walter E. Vest, Huntington; Dr. R. J. Wilkinson, Huntington.

The *Southern Medical Journal* has already announced that the full report of the twenty-third annual meeting will be published in the January issue of that publication. Commenting briefly on the meeting in the December issue, the *Southern Medical Journal* spoke as follows:

"As the *Journal* goes to press, the officers of the Southern Medical Association have scarcely alighted from the train after their trip to Cuba. The last traveler is still unpacking his Havana cigars. There is not time to describe all the felicities of the twenty-third meeting at present. The Council of the Association may be congratulated, however, upon having chosen Miami for this event; and the Dade County Medical Society is to be thanked most heartily for its invitation and courtesies.

"Never have members of the Southern Medical Association been more graciously and hospitably received by hosts who seemed more able and anxious to anticipate and gratify their every wish than in Miami. Never have they been more bountifully entertained and never has a place of gathering been chosen more suited to delight the eye and all the sensibilities than Miami. To the visiting physicians, Miami and the surrounding district, Miami Beach and Coral Gabes, were a fairyland. They furnish the most beautiful setting and the most pleasant climate for a convention in the United States.

"Indeed, the only disadvantage for physicians was occasioned by the loveliness of the situation, which had one ill effect upon more Northern visitors. After they had thawed out and put on their Palm Beach clothes, it became almost impossible for them to leave the balmy sea breezes, forget the exquisite scenery and go into the section meetings to listen to medical papers.

"Many visitors sighed for an illness which might allow them to stay all winter in Miami; for most disabilities, mild or severe, are benefited by that delightful clime.

"Of the more than two thousand guests who attended the convention, all will return to their homes ardent boosters for Miami. All will live hoping that some day, if they are very, very good, they may return.

"Immediately after the meeting, nearly four hundred of the visitors embarked by airplane and by rail and boat for Cuba, where four and five thoroughly joyful days were passed. They were entertained by

members of the Cuban profession who had attended the Miami meeting, and were able to see the lovely land of Cuba under exceptionally agreeable circumstances.

"The Association is honored to have for its officers for 1930: For president, Dr. Hugh S. Cumming, surgeon general, U. S. Public Health Service, Washington, D. C.; first vice-president, Dr. Roy J. Holmes, Miami, Fla.; second vice-president, Dr. Isidore Cohn, New Orleans, La.; chairman of the Council, Dr. W. E. Vest, Huntington, W. Va.; chairman, Board of Trustees, Dr. W. W. Crawford, Hattiesburg, Miss.

"The next meeting will be in Louisville, Kentucky, November 11–14, 1930."

Causes of Death

The U. S. Department of Commerce has announced that 1,378,675 deaths occurred in 1928 in the registration area in continental United States, corresponding to a death rate of 12.0 per 1,000 population as compared with 11.4 in 1927.

This area in 1928 comprised 44 states, the District of Columbia, and 10 cities in non-registration states, with an estimated population on July 1 of 114,495,000, or 95.4 per cent of the population of the United States. In 1927 the registration area included only 91.3 per cent of the total population.

Increases in rates (per 100,000 population) from those of the preceding year were from the following principal causes: Diseases of the heart (195.7 to 207.7), cerebral hemorrhage and softening (84.0 to 87.0), nephritis (92.5 to 95.0), diabetes mellitus (17.5 to 19.0), cancer (95.6 to 95.9), influenza (22.6 to 45.2), and pneumonia, all forms (80.5 to 98.0). The deaths from these causes numbered 741,739, which is considerably more than half the total number of deaths from all causes. Increases in rates were shown also for measles (4.1 to 5.4), and pellagra (5.0 to 6.1).

The death rate from all accidental causes increased from 78.4 to 79.2, the individual types of accidents showing the greatest increases being accidental drowning (6.7 to 7.1), and automobile accidents, excluding collisions with railroad trains and street cars (19.5 to 20.8); if deaths from these collisions were included, the total number from automobile accidents in 1928 would be 26,348 as compared with 23,312 in 1927. The corresponding rates (per 100,000 population) for 1928 and for 1927 are 23 and 21.4.

Significant among the decreases in rates from 1927 to 1928 were those from tuberculosis, all forms (80.8 to 79.2), congenital malformations and diseases of early infancy (67.7 to 65.6), whooping cough (6.9 to 5.4), diarrhea and enteritis, under 2 years (21.6 to 20.7), acute anterior poliomyelitis (1.9 to 1.2), typhoid and paratyphoid fever (5.5 to 4.9), and scarlet fever (3.3 to 1.9).

The death rate from railroad accidents decreased from 6.4 to 5.9, and from mine accidents, from 2.5 to 2.3.

County Society Objectives

An enviable and an inspiriting record was made by the Fayette County Medical Society during the past year. This society was one of the first in the state to have its membership 100 per cent paid up, and it increased its membership approximately 20 per cent during the year. The society met each month, with excellent attendance, in spite of the wide territory that it covers. All of the programs were put on by the members of the society, and the society did not depend upon outside material or speakers. During the year a comfortable surplus was set aside in the treasury to be spent, it is understood, for the purchase of a lantern, a screen, and a projectoscope.

Looking back over the Fayette County record, it is interesting to note the remarks of Dr. M. C. Borman, of Montgomery, president, which were made at the beginning of 1929. Dr. Borman does not take full credit for the achievements in Fayette county, and neither does Dr. H. A. Walkup, the secretary. The success, according to Dr. Borman, came as a result of the splendid support and coöperation on the part of each individual member. Because of the record made by Fayette County last year, the objectives outlined by Dr. Borman early in 1929 are published herewith:

"1. That we continue the progressive policies begun by Dr. Walkup in building the society into an active organization. Our past president has been an arduous worker, vigorous and constructive, and we owe him a tribute for his splendid services.

"2. That we use and develop the talent within our own society in so far as possible. Each time we reach outside our own society for material it suggests defeat. Practically all of the papers read at our meetings should come from our own members. The society will progress in direct proportion to the active interest shown by each member. This is your society, to make of it what you will.

"3. We should attempt to get a 100 per cent

membership. Every physician practicing legitimate medicine in the county should be a member. We should be opposed to granting reciprocity privileges to a physician by the payment of several years' back dues.

"4. We should strive for greater attendance at our meetings.

"5. The meetings should be held regularly the second Tuesday of each month, should begin at eight o'clock; should precede and end with a roll call.

"6. We should urge that the program be limited to two papers, each paper requiring not more than twenty minutes for presentation, allowing ample time for discussion.

"7. Let us plan our programs sufficiently far in advance to give the essayist opportunity for careful preparation.

"8. It might be advisable for each member to choose some subject in advance about which he is seeking more information, which interests him but which is somewhat off his beaten path, in order to widen his interests and information. The authorities on the subject in the society could discuss the paper and set us aright if we erred.

"9. That the essayist file his prospective paper with the secretary at the meeting of the society one month prior to the presentation of his own paper. This will always insure a program, will avoid last-minute requests with attendant embarrassment, and, in case of illness of the essayist, or other emergency, his paper can be presented by a colleague or read by the secretary.

"10. That at each meeting one member present, as a case report, his most interesting case during the preceding twelve months.

"11. That our major social activities be confined to one or two meetings during the year.

"12. That instead of expending ten or fifteen dollars occasionally for food at our meetings, this money should be placed in the treasury for the future purchase of a lantern, screen, and projectoscope.

"13. Each paper and case report presented to the society will be forwarded to the state Medical Journal for possible publication.

"14. Dr. William R. Laird has generously volunteered to present to the society a silver loving-cup in memory of his uncle, Dr. J. M. Laird, in whose office this society had its beginning. The name of the society member who has presented during the year the best paper will be engraved upon the cup, the cup to remain in the possession of that member for a year or in the permanent home of the society when it is established."

Indian Tribal Doctors

Being a tribal doctor among the Piute Indians is a hazardous occupation, for if the Piute doctor loses three patients he is put to death. On the other hand, if he refuses to answer a sick call, he is executed; so he is in danger on every side.

Capt. John Lee Maddox, who has made an exhaustive study of medical superstitions and practices among uncivilized peoples, relates in *Hygeia* for December a story of a luckless Piute woman doctor named Heap-Choke.

Heap-Choke's only qualification for the job of tribal doctor appears to have been the fact that she was considered too ugly to remarry after her husband died. Her first patient was a woman in the last stages of tuberculosis. The treatment consisted of much energetic howling and dancing to frighten the demons away. The demons were not impressed, however, and the woman died in the midst of the ceremony.

Two weeks later a young man was seriously injured in a fight with a grizzly bear. Heap-Choke boiled together several kinds of weeds, a handful of tobacco, four rattlesnake heads, a few worn-out moccasins, seasoning the whole with cayenne pepper and kerosene oil. As the man was taking the third dose, he suddenly breathed his last.

Shortly after this the daughter of the big chief came down with a disease of the brain. Alarmed by her former failures, Heap-Choke resorted to every known means of exorcising the evil spirits of disease. She not only gave the girl medicine, but she pounded a tin pan for twenty-four hours in the sick girl's tent, dancing and yelling with might and main. But the spirits refused to budge and the third patient was gone.

The tribal council met and decided that, since every patient who came to Heap-Choke succumbed, she had no power with the spirits. There was only one recourse. Three strong men took the unsuccessful doctor outside the camp, shot, scalped and buried her, and the position of spirit doctor was given to a person more worthy of the honor.

Gorgas Institute Report

The annual report of Dr. Cary T. Grayson, president of the Gorgas Memorial Institute, was presented at the yearly meeting of the members and board of directors of the institute on October 16,

1929, at the Stevens Hotel in Chicago. A copy of this report, together with the laboratory report of Dr. Herbert C. Clark, director, has just been released. Due to the widespread interest in the Gorgas Institute, and because of the interesting features of the reports by Dr. Grayson and Dr. Clark, both reports are published herewith. Dr. Grayson's presidential report follows:

An analysis of Institute effort in the twelve months under review will show that our program has been one of wide scope and has been instrumental in clearing the minds of the public, particularly in smaller communities and rural sections, as to the value of scientific medicine. We have carried on this work in various ways.

Field Campaign.—Notwithstanding the fact that field effort was temporarily abandoned in April and has only just now been resumed, in the little more than a year that our people have been in the field we have accomplished the following: Twenty-five states have been contacted; 457 health talks have been made; a total audience of 148,346 has been addressed; 72 Gorgas Health Corps have been organized; 32 newspapers have been added to the Gorgas Syndicate through field effort; 525 Health Posters have been distributed by field workers; 55 showings of a health film have been arranged to a total audience of 29,243; 5 special radio talks have been made by field workers, in addition to the talks made regularly over the score of stations under contract to the Memorial.

This type of campaign has been very well received by the medical and dental professions as well as the laity. Letters of hearty endorsement from representatives of these groups have reached the office, and we have been urged to continue this type of work.

In the plan of Gorgas Health Corps is seen a partnership between the medical and dental professions and the public, and in this plan are tremendous possibilities of nation-wide health service. It is hoped that a comprehensive program for these groups may be worked out during the coming year, but in the meantime we find that they have held organization meetings and have been of aid to their respective communities in attempting to solve community health problems.

A questionnaire has been sent out to determine to what extent the Gorgas Memorial has been instrumental in arousing increased interest in the periodic health examination in the various communities that have been contacted. The result of this survey is expected to confirm the value of this particular type of service, as the first thousand replies indicate an average increase of 20% over last year.

Press Activities.—In addition to the 32 newspapers added to our syndicate through the efforts of our field workers, an additional 23 newspapers have been secured through correspondence. This makes a total of 55 papers that have been added during the past year. Physicians, dentists, nurses, dieticians, hygienists, athletic directors and other health-workers and writers have aided us in maintaining this service.

Our contract with the United Press was discontinued and in its place we have inaugurated a health service to a group of some 40 leading labor papers of the country. This we consider a very valuable service, as it carries authoritative health information to the working man. In this task we are assisted by the medical directors of large manufacturing plants, railways, and insurance companies.

Special stories have been written for special occasions and for health journals, and it is hoped that we may have an opportunity to do more of this type of work during the coming year. During Gorgas Week, just recently observed, many of the leading newspapers gave us generous mention; radio talks were given in honor of the 75th anniversary of the birth of General Gorgas; many of our members and friends gave three-minute tributes at their respective luncheon clubs; and most of our Health Corps held special meetings in honor of the occasion. In addition to the posters placed by our field workers, 800 posters were sent to our keymen for display in drug stores during Gorgas Week.

The maintenance and growth of our field and press programs has again been made possible largely through the generosity of the Metropolitan Life Insurance Company.

Gorgas Essay Contests.—Through the generosity of Mr. Charles R. Walgreen, of Chicago, we were able to launch our first national essay contest last spring. This contest was participated in by students in junior and senior classes of public high schools in 34 states. The subject was "William Crawford Gorgas: His Life and His Work," and many excellent manuscripts were received. On May 23, 1929, President Hoover, at the executive offices, awarded the first Charles R. Walgreen prize of $500 to the national winner, Miss Gertrude Carter Stockard, of Mountainburg, Arkansas, in the presence of a distinguished company of guests. Miss Marguerite Hastings, of Watertown, Massachusetts, winner of the second national prize, received $150 in cash;

$20 was awarded to each state winner, and a bronze Gorgas medallion was awarded to local high school winners.

The second national essay contest, which is to include parochial high schools, has just been launched, and was again made possible through Mr. Walgreen's interest. Our subject this year is "The Gorgas Memorial: Its Relation to Better Personal Health and the Periodic Health Examination." Increased cash awards are offered to this year's contestants, and it is planned to honor the national winner with a ceremony similar to that last year. These essay contests have received the enthusiastic endorsement of school and health officials, as they provide a means for health research by young people of high school age.

Department of Mosquito Control.—During the past year our engineers have continued their surveys for locations and extent of mosquito breeding, and have, at the request of various groups and individuals, outlined requirements under the Gorgas plan for total, permanent extermination of these pests in several communities. Briefly, the following work has been done:

Suffolk County, New York: A committee of property owners requested the Gorgas Memorial to make a survey of this county, which includes over half of Long Island, about 1,000 square miles. This survey for the location and extent of mosquito breeding was made, and a detailed report, including requirements under the Gorgas plan, was furnished the committee. Special legislation for the accomplishment of this work is needed, but we are assured it will be put through at the next session. It is estimated that $550,000 is needed to execute the plan.

Toledo, Ohio: We were requested by the Chamber of Commerce to survey all area affecting this city and its suburbs. A report was duly filed. Estimated cost of extermination under the Gorgas plan is $250,000.

New York City: Our engineers were instrumental in getting the Health Department to authorize a survey of all boroughs.

Boston: Our engineers conferred with the State Health and State Agricultural departments in framing a law against Massachusetts mosquitoes, which carries a taxing provision. This was duly passed. The Institute is to make surveys and outline the Gorgas plan as called on.

Maine: The Gorgas Memorial made a survey of Cranberry Isles, just south of Bar Harbor, sixteen square miles of prolific breeding area. The work followed promptly under the Gorgas plan and the area is now mosquitoless.

A survey of Bar Harbor has been ordered by the Chamber of Commerce. It is expected that all of Mt. Desert Island will be included in the survey.

The Board of Trade of Old Orchard Beach asked for and received a survey. The estimated cost of the work to be done is $16,500. It is planned to start this work next spring.

At the request of Judge Kenyon of the Supreme Court, Senator Edge, and others, a survey of Phippsburg Peninsula, lying south of Bath, was made. The estimated cost of the work was $15,000. The work is now nearly completed, and they will have a mosquitoless season next year.

The city of Bath will probably be next. The governor of Maine is watching this work with great interest, and, we are informed, is sold on the idea of a "Mosquitoless Maine."

Kennebunkport Beach has asked for a survey. The Maine mosquito law, which was passed at the last session, is without teeth, and the Gorgas Memorial is assisting in the work of revising it, with the hope of its receiving legislative attention at the next session.

Illinois: Surveys have been made in Cairo and Crystal Lake, but the work recommended has not been done as yet.

Wisconsin and Michigan: In Milwaukee and in several communities in Michigan our engineers have had conferences with city officials, by invitation, but surveys have not been authorized.

Rhode Island: Survey of the Watch Hill section has been requested. No permanent mosquito control work has been done here since the war.

Wilmington, Delaware: The Associated Women's Clubs are making an effort to raise money sufficient to authorize a survey.

It is of prime importance to secure sufficient funds to widen the scale of the Department of Mosquito Control. Major Edwin M. Skinner, the director, needs the assistance of several young engineers, whom he can train to make surveys and to outline the application of the Gorgas plan to every type of situation. We are known throughout the country for our work in mosquito extermination, and the splendid reputation already built up must be sustained by continued, increased effort and the personnel to deal with the increasing volume of requests for our service.

Gorgas Memorial Laboratory.—Dr. Clark made

the following report on the Gorgas Memorial Laboratory:

The keys to the building given to the Gorgas Memorial Institute by the Republic of Panama for use as a laboratory were handed to the director during the second week in January of this year. This admirable building and the accompanying land lie between Santo Tomas Hospital and the Hospital de Panama. The plot occupies an entire block in the Exposition area of Panama City, where most of the legations are located.

The gift of this ground and building is actually in exchange for the site originally donated by the government of Panama, because it seemed unlikely that any adequate faclities for our work could be prepared in a reasonable length of time on the other location. This exchange of property was consummated in April and all possible legal steps have now been taken to get a deed recorded.

Since January the director's time has been very largely consumed in adapting the building to the needs of the service. It was necessary to install water, sewage, gas, electric and telephone services, and to assemble furniture, library, apparatus, and general supplies. All heavy apparatus is of necessity installed in the basement, since the wiring in the walls of the building only carries current for lights and small equipment. The auditorium will seat 100 people and offers wall space for tables and book cases. Other library space can be provided in the corridors of the front wing. There is a laboratory room, 27 by 25 feet, on the first floor, and four somewhat smaller laboratory rooms on the second floor.

Six temporary buildings that completely surrounded three sides of the laboratory have been removed and the site is being leveled and planted in a uniform type of grass. A one-story building, 18 by 72 feet, has been erected at the rear of the laboratory to serve as a storehouse, garage, and animal house. A six-foot wall is being built to enclose the lot, leaving space around all four sides for the usual pavement which will be built by the Republic. There will be one gate in the wall on the 35th Street side.

Our library at present consists of 150 books of recent publication, 21 journals, and a certain number of reprints and monographs. The library will, of course, need to be augmented, and old records in particular will be required.

It was not deemed wise to assemble a professional staff until the building was equipped. A medical entomologist, Major L. H. Dunn, and your director are the only professional members on the staff at present. During this construction period these two men have been engaged in making surveys within the Republic and the Canal Zone in order to find suitable outposts for our rural observations. Forty-five locations have been surveyed for malaria and for blood-sucking insects. It is the desire to select regions that have police outposts so that our transportation and housing expense can be kept at a minimum in our rural experiments. Camp equipment of a permanent nature has been assembled for our use in the uninhabited zones.

Our entomological surveys have yielded more than was expected in connection with mosquitoes, horse flies, sand flies, human ticks, fleas, and lice. The malaria surveys have developed results that are interesting and have stimulated efforts to control the disease in rural units. Our laboratory has also been able to assist in certain problems connected with animal industry in Panama.

Our first organized expedition into an uninhabited area occurred during the month of July. We spent about three weeks in the virgin jungle on the boundary line between Costa Rica and Panama. The object of this trip was to study insect life that had no contact with people and to make a careful survey for parasites of the blood in wild monkeys. It is believed that we have found a new screw-worm fly on this trip and eight species of horse flies that have not been recorded for this country. Furthermore, two of the four species of monkeys captured revealed malarial parasites that can not be distinguished from human malarial parasites in peripheral blood films. It will require some time to complete the study of the material collected on this trip.

The construction and organization period has now reached the stage where attention can be directed more intensively to the scientific program. It is hoped that some field experiments in malaria can be carried out during the coming year in connection with the Madden dam project on the Chagres River and perhaps with the army maneuvres during the coming dry season. Rural units in the Republic of Panama and in the plantation of the United Fruit Company also offer us fields.

The government of Panama has recently issued a decree making your director honorary consultant to its hospitals. This will afford the opportunity needed for most of our mosquito-biting experimental work on carriers of malaria. It is now desired to supervise the pathological department of Santo Tomas Hospital. That laboratory has been perform-

ing from 40 to 50 autopsies a month and most of the material is being lost at present, since the position of pathologist is vacant. The government of Panama would be willing to place this department under the control of the Gorgas Memorial Laboratory. Much material concerning tropical medicine passes through that laboratory. It is suggested that the Gorgas Memorial Institute open negotiations with the Republic of Panama to select a pathologist for Santo Tomas Hospital, in order to gain the use of their material and to assemble valuable autopsy records. This pathologist will be a member of the staff of the Gorgas Memorial Laboratory, but under the executive direction of the Santo Tomas Hospital, which will supply quarters and subsistence.

Another member should be added to our staff who can cover the work in protozoölogy, parasitology, and bacteriology. This man should be of recognized ability and able to perform the duties of assistant director of the laboratory.

A man of ability in veterinary research should also be added to the staff. Colonel Siler, chief health officer of the Panama Canal, sees this need in his service, and it is hoped that the veterinary corps of the United States Army will be able to detach such an officer for service in our laboratory. Our organization is extremely fortunate in having Colonel Siler in Panama. His advice is valuable to us and his interest in our work is keen.

A staff of technicians will be needed now, and this will require at least one man well enough qualified to teach and direct others. We are able to get as temporary technicians for use in our laboratory men who are on leave from the Canal Zone service.

For field administrative assistance within the Republic of Panama I suggest that we place on our staff Dr. G. Parades of Panama City. He could be of service as an associate field director or liaison officer between our organization and the interior of the Republic of Panama. He occupies the position of chief health officer of the Republic of Panama and the president of the Republic has granted him permission to add this duty to that of his public office.

It is also suggested that the vacancy now existing on our scientific board be filled by naming Dr. William M. James of the Hospital de Panama as a member. He has done creditable research work in amœbiasis and malaria; he is a man of considerable influence in the neighboring Latin-American countries, and is well known to Colonel Siler.

The following scientific problems are either under investigation now or will be undertaken during the coming year:

1. Study of human carriers of malaria immediately following the treatment of an acute attack of malaria fever. Mosquito-biting experiments during the course of the patient's treatment with quinine, plasmochin, etc.

2. Transfer experiments with monkey and human species of malaria to determine whether the monkey is an animal reservoir for human malaria.

3. Mosquito-biting experiments to test the infectibility of anophelines other than the three commonly incriminated species in our tropics.

4. A study of anopheline flight habits throughout the day and night under various seasonal conditions both in the wild and domestic regions.

5. A study bearing on the number of egg mats that anopheline mosquitoes may deposit. There is some reason to believe that they survive more than one egg hatch.

6. Establish mosquito indices of malarial infection on anopheline catches indoors and outdoors, both in wild and domestic regions.

7. Some experiments bearing on possible sandfly vectors of unexplained fever epidemics that occasionally occur on the Atlantic side of the Canal Zone.

8. Experiments with two species of human ticks as possible carriers of elapsing fever.

9. Experiments with horse flies in connection with equine trypanosomiasis. Our entomological surveys have shown where the larval stages of two species of horse flies are passed. As far as we can learn, this information is entirely new.

10. Southern cattle fever (piroplasmosis) will receive some attention in connection with imported non-immune dairy stock.

The Influenza Discovery (?)

With little if any apparent warrant, it is again announced, for at least the tenth time in five years, that the causative organism of influenza has been discovered and that it is hoped to prepare a vaccine. There is thus far little or no evidence in scientific medical literature, or even in spoken addresses, to indicate that I. S. Falk, Ph.D., and his associates have progressed any further toward the solution of this problem than have workers in other parts of the world, now or in the past. Even the staid New York *Times* succeeded in confusing antitoxins, vaccines

and similar scientific terms in a manner that can be explained only by the undue haste with which the announcement was rushed to the audience. The furor is inexcusable.—*J. A. M. A.*

WOMAN'S AUXILIARY

Marion County Organized

The Woman's Auxiliary to the Marion County Medical Society was organized in November with 26 members, according to a recent announcement by Mrs. J. Preston Lilly, of Morgantown, state president. Mrs. Lilly, accompanied by Mrs. Brinley John of Morgantown, attended the organization meeting at Fairmont and assisted in working out the details for the new auxiliary.

Officers of the Marion County Auxiliary, elected at the organization meeting, include Mrs. William A. Welton, president; Mrs. Charles P. Francis, first vice-president; Mrs. J. R. Tuckwiller, second vice-president; Mrs. E. P. Smith, secretary, and Mrs. Dallas Hamilton, of Mannington, treasurer.

Recent Appointments

Mrs. M. I. Mendeloff, of Charleston, has been appointed to the office of state editor, to succeed Mrs. T. M. Barber, whose term recently expired. Mrs. Mendeloff's address is 1707 McClung Street, Charleston, W. Va., and all county auxiliaries are urged to send in reports of their meetings for publication in the Auxiliary section of the WEST VIRGINIA MEDICAL JOURNAL.

Mrs. J. P. Lilly, of Morgantown, state president, has also announced that Mrs. R. H. Edmondson, of Morgantown, is the state historian. Mrs. Lilly has asked that all data pertaining to the history of organized medicine in West Virginia be sent in to Mrs. Edmondson.

Monongalia County

The home of Dr. and Mrs. R. H. Edmondson, of Morgantown, was the scene of a delightful afternoon meeting of the Woman's Auxiliary to the Monongalia County Medical Society on October 23. Dr. C. F. Boyer, county health officer, was the speaker on the program. He explained the Monongalia county health unit to be established in the near future. Dr. Boyer, who was introduced by the president, Mrs. H. C. Powell, urged the coöperation of the Auxiliary with the establishment of the health unit.

Mrs. Everett R. Taylor announced that the Eastmont Sanitarium committee had supplied the children in the institution with hot-water bottles. A social hour followed the meeting.

Members present included Mrs. C. F. Boyer, Mrs. C. C. Romine, Mrs. George Phillips, Miss Repta McBee, Mrs. DeWitt MacDonald, Mrs. P. D. Arbogast, Mrs. Brinley John, Mrs. W. H. Powell, Mrs. Eldon B. Tucker, Mrs. J. Preston Lilly, Mrs. Donald Post, Mrs. H. C. Powell, Mrs. A. E. Smith, Mrs. Everett R. Taylor, Mrs. H. V. King, and Mrs. Edmondson.

McDowell County

Election of officers for the coming year was held at the meeting of the Woman's Auxiliary of the McDowell County Medical Society on the afternoon of December 12, 1929, at the home of Mrs. W. B. Stevens, of Eckman. The complete report of this interesting gathering has been received as follows:

Mrs. R. C. Newkirk was named as president of the Auxiliary, with the other new officers as follows: Mrs. W. B. Stevens, first vice-president; Mrs. H. G. Camper, second vice-president; Mrs. R. V. Shanklin, third vice-president; Mrs. V. L. Wetherby, secretary; Mrs. W. G. Hall, treasurer.

A committee was appointed by Mrs. H. G. Camper, retiring president, who presided over the meeting, to confer with the Rev. W. C. Williams, president of the county welfare board, concerning cases of needy, sick, and crippled children whom the Auxiliary will attempt to aid. The committee named was: Mrs. E. Vermillion, chairman; Mrs. C. F. Hicks.

That $25 should be given to the Salvation Army Christmas fund, and that members of the Auxiliary buy tuberculosis Christmas seals, was decided upon by the members.

Letters were read from Mrs. R. B. Shrout, chairman of the "book" committee of the McDowell Woman's Club, and from district school superintendents, in which work of the Auxiliary toward contributing a circulating library to schools in the county and toward providing subscriptions to *Hygeia* for the schools, was highly praised.

Forms of social and civic activities of medical auxiliaries in the state were discussed in a paper read by Mrs. W. L. Peck.

Report was made of the dance recently sponsored by the organization, which stated that the dance had been successful from every phase.

Following the business session, Mrs. Stevens served a salad course to those present.

MONTHLY MORBIDITY REPORT

BY COUNTIES

PERIOD ENDING NOVEMBER, 1929	Chickenpox	Diphtheria	Influenza	Measles	Meningitis, Cer. Spi	Poliomyelitis	Scarlet Fever	Smallpox	Tuberculosis, All Forms	Typhoid Fever	Whooping Cough
Barbour	1					1			1		
Berkeley		2					6			1	
Boone	24	10	2				9			7	
Braxton		8								5	10
Brooke	8	3		1			11		1		1
Cabell		14		8	1		25	1			
Clay							12				
Doddridge			20				24			1	
Fayette		10				1	17	1		5	40
Gilmer							3		2	2	
Grant							2			1	
Greenbrier		12					7		2	5	
Hampshire		1			1		1				
Hancock		1					9			2	
Hardy							1			10	
Harrison	121	4		8			30		3		40
Jefferson		1									
Kanawha	46	37	1	1		1	46	1	13	6	22
Lewis	1	1	1	1							2
Lincoln	1	1		5			1	2	1	2	17
Logan	1	6		1			5	49	1	14	
McDowell	1	11					10	4		2	
Marion	5	7		15	1	1	19		4	2	
Marshall	2						14			3	1
Mason	12		19								6
Mercer	11	5	7	3		1	1			3	
Mineral	31	6	33	25	1		17		6		32
Mingo	3	6	2	30	3	1	10	10	1	2	19
Monongalia	7	7					2			2	6
Monroe		2									
Nicholas		2					6				
Ohio	33		1	2	1		17		6		8
Pendleton							1				
Pleasants							8				
Pocahontas		4					5			1	
Preston		2					1			2	
Putnam	4										
Raleigh	34	16		1			25	1		4	4
Randolph										2	
Roane						1					
Tucker								1			
Tyler			4								
Upshur							6				
Wayne		2	3	1			3	2			
Webster	1						5				
Wirt		1					7			6	
Wood		32	4				24		1	4	
TOTALS	346	214	97	102	8	7	390	72	42	94	199

ACTIVE AND HONORARY MEMBERSHIP
OF THE
WEST VIRGINIA STATE MEDICAL ASSOCIATION

(EDITOR'S NOTE.—Below will be found the names of all active and honorary members in good standing in their respective county societies and in the West Virginia State Medical Association. All former members whose 1929 dues were not paid by December 31 were dropped from the Association records. In the following roster the asterisk (*) appearing before a name indicates honorary membership.)

Barbour-Randolph-Tucker Society

H. H. Bolten, Pierce
A. S. Bosworth, Elkins
J. L. Bosworth, Mill Creek
A. P. Butt, Elkins
R. J. Condry, Elkins
T. B. Crittenden, Kitzmiller, Md.
Guy N. Cromwell, Davis
Wm. R. Dove, Harman
A. M. Fredlock, Elkins
B. I. Golden, Elkins
D. C. Gordon, Elkins
C. H. Hall, Elkins
E. Meudel Hamilton, Belington
J. C. Irons, Elkins
F. K. Lyons, Belington
E. R. McIntosh, Elkins
Guy H. Michael, Norton
Willis S. Michael, Norton
Jos. L. Miller, Thomas
Wm. L. Miller, Bemis
S. G. Moore, Elkins
H. K. Owens, Elkins
Orr L. Perry, Elkins
W. Scott Smith, Philippi
C. G. Stroud, Brownton
J. M. Teter, Box 121, Century
C. T. Upchurch, Galloway
W. M. Whiteside, Parsons
C. B. Williams, Philippi
T. M. Wilson, Elkins
*J. W. Bosworth, Philippi
*L. W. Talbott, Elkins
*A. H. Wooford, Belington

Brooke County Society

J. R. Arnold, Follansbee
L. J. Bernstein, Wellsburg
W. T. Booher, Wellsburg
F. T. Dare, Wellsburg
F. L. Matson, Wellsburg
A. E. McClure, New Cumberland
J. S. McCullough, Follansbee
W. J. McDonald, Wellsburg
J. P. McMullen, Wellsburg
Harry F. Nolte, Beech Bottom
E. N. Pell, Beech Bottom
J. C. Schultz, Wellsburg
Dr. R. H. Zemer, Colliers
*B. F. Harden, Wellsburg
C. A. Shafer, Chester

Cabell County Society

James H. Baber, Huntington
H. E. Beard, Huntington
W. F. Beckner, Huntington
Oscar B. Biern, Huntington
J. R. Bloss, Huntington
R. M. Bobbitt, Huntington
H. A. Brandebury, Huntington
B. F. Brown, Huntington
C. M. Buckner, Huntington
V. L. Chambers, Huntington
A. W. Crews, Huntington
D. J. Cronin, Huntington
Raymond H. Curry, Barboursville
B. H. Denham, Huntington
C. P. S. Ford, Huntington
J. C. Ford, Huntington
W. E. Gattens, Huntington
J. A. Guthrie, Huntington
L. V. Guthrie, Huntington
J. C. Heardman, Huntington
R. Hardwick, Huntington
H. D. Hatfield, Huntington
C. M. Hawes, Huntington
J. S. Hayman, Huntington
Arthur N. Henson, Hamlin
W. D. Hereford, Huntington
I. C. Hicks, Huntington
O. T. Hines, Huntington
I. I. Hirschman, Huntington
F. C. Hodges, Huntington
Fredrick J. Hoitash, Huntington
G. L. Howard, Huntington
J. E. Hubbard, Huntington
B. L. Hume, Huntington
W. Byrd Hunter, Huntington
G. D. Johnson, Huntington
Arthur S. Jones, Huntington
A. T. Jordan, Hurricane
W. C. Kappes, Huntington
J R. Keesee, Huntington
A. D. Kessler, Huntington
A. K. Kessler, Huntington
J. S. Klump, Huntington
C. A. Latham, Huntington
W. M. Lewis, Huntington
G. M. Lyon, Huntington
A. R. MacKenzie, Huntington
H. C. Malcolm, Huntington
F. O. Marple, Huntington
H. B. Martin, Huntington
J. C. Mathews, Huntington
I. W. Mayberry, Huntington
M. B. Moore, Huntington
T. W. Moore, Huntington
Lon C. Morrison, Milton
W. E. Neal, Huntington
J. Lester Patterson, Huntington
K. C. Prichard, Huntington
J. E. Rader, Huntington
E. E. Rose, Huntington
F. X. Schuller, Huntington
Francis A. Scott, Huntington
R. M. Sloan, Huntington
J. H. Steenbergen, Huntington
W. W. Strange, Huntington
W. C. Swann, Huntington
C. T. Taylor, Huntington
I. W. Taylor, Huntington
W. C. Thomas, Huntington
R. S. Van Meter, Huntington
Walter E. Vest, Huntington
L. T. Vinson, Huntington
S. P. Walker, Huntington
C. W. Warnock, Huntington
A. J. Watts, Huntington
R. J. Wilkinson, Huntington
C. G. Willis, Huntington
C. B. Wright, Huntington
R. M. Wylie, Huntington

Central West Virginia Society

S. P. Allen, Webster Springs
G. O. Brown, Buckhannon
H. S. Brown, Sutton
C. C. Carson, Gassaway
D. G. Caudy, Tioga
R. G. Cutright, Buckhannon
L. W. Deeds, Buckhannon
Cecil C. Denham, Buckhannon
J. B. Dodrill, Webster Springs
Hugh Dunn, Richwood
O. O. Eakle, Sutton
W. E. Echols, Richwood
C. F. Fisher, Clarksburg
E. S. Frame, Fenwich
M. F. Gruber, Erbacon
S. S. Hall, Buckhannon
L. O. Hill, Camden-on-Gauley
James McClung, Richwood
R. A. McCosh, Richwood
M. T. Morrison, Sutton
L. W. Page, Buckhannon
J. A. Rusmisell, Buckhannon
Karl H. Trippett, Glenville
H. O. Vantromp, French Creek
Everett Walker, Adarian
*Fleming Howell, Buckhannon
*J. L. Pifer, Buckhannon

Doddridge County Society

Homer Freeman, Center Point
A. M. McGovern, West Union
A. Poole, West Union
E. T. Wetzel, West Union

Eastern Panhandle Society

A. O. Albin, Charles Town
E. H. Bitner, Martinsburg
W. Ross Cameron, Martinsburg
Roger Clapham, Martinsburg
James A. Duff, Martinsburg
A. B. Eagle, Martinsburg
Victor Glover, Martinsburg
James K. Cuthrie, Martinsburg
B. F. Haines, Charles Town
W. T. Henshaw, Charleston
C. C. Johnson, Harpers Ferry
G. W. Martin, Martinsburg
T. K. Oats, Martinsburg
F. M. Phillips, Charles Town
Marvin H. Potterfield, Martinsburg
R. K. Shirley, Hedgeville
G. J. E. Sponseller, Martinsburg
P. E. Stigers, Hancock, Md.
R. E. S. Taylor, Paw Paw
W. A Wallace, Martinsburg
*H. B. Ransom, Harpers Ferry
Ross Cameron, Martinsburg
Clifford Sperow, Martinsburg
R. E. S. Taylor, Paw Paw

Fayette County Society

Templeton Adair, Mt. Hope
Arthur E. Bays, Boomer
F. W. Bilger, Maybeury
W. P. Bittinger, Summerlee
M. C. Borman, Montgomery
J. C. Brown, Nallen
H. F. Brugh, Montgomery
W. E. Bundy, Minden
A. J. Burkholder, Layland
G. O. Crank, Lawton

Thomas B. Daughtery, Fayetteville
Claud Frazier, Powellton
C. A. Gooch, Hinton
F. W Groome, Elverton
Ed. J. Grose, Fayetteville
E. S. Hamilton, Oak Hill
Frank S. Harkleroad, Harvey
L. R. Harless, Glen Farris
W. N. Haynes, Victor
O. J. Henderson, Montgomery
G. G. Hodges, Kilsythe
Gorry Hogg, Harvey
Ralph Hogshead, Carbondale
L. G. Houser, Beckley
J. E. Hughart, Landisburg
A. L. Hunter, Pax
C. C. Jackson, McKendree
E. E. Jones, Mt. Hope
W R. Laird, Montgomery
Thomas A. Lamb, Montgomery
C. W. Lemon, Claremont
C. Martin, Rainelle
J. A. McGraw, Cunard
W. P. McIntosh, Longacre
C. G. Merriam, Sun
M. A. Moore, Kingston
A. L. Morris, Jodie
R. S. Peck, Cannelton
S. W. Price, Scarbro
B. F. Puckett, Oak Hill
H. H. Puckett, Fayetteville
T. G. Reed, Elkridge
C. F. Ridge, Thurmond
G. W. Sanford, Concho
J. S. Shaffer, Montgomery
D. W. Shirkey, Montgomery
G. W. Skaggs, Page
H. C. Skaggs, Montgomery
G. A. Smith, Montgomery
J. M. Spinks, Mt. Hope
C. W. Stallard, Montgomery
J. F. Van Pelt, Oak Hill
J. W. Walker, Winona
H. A. Walkup, Mt. Hope
C. L. Woodbridge, Montgomery
J. B. Woodville, Lansing
R. P. Woods, Oak Hill

Grant-Hampshire-Hardy-Mineral

J. G. Abbott, Piedmont
W. M. Babb, Keyser
Robert Bess, Piedmont
Thomas Bess, Keyser
O. V. Brooks, Moorefield
H. F. Coffman, Keyser
W. G. Drinkwater, Gormania
V. L. Dyer, Petersburg
J. F. Easton, Romney
Wm. A. Flick, Keyser
L. C. Giffin, Keyser
G. S. Gocbenour, Moorefield
J. B. Grove, Petersburg
W. G. Highberger, Maysville
S. B. Johnson, Franklin
Z. T. Kalbaugh, Piedmont
J. C. Lantz, Emoryville
R. W. Love, Moorefield
E. B. Martin, Romney
M. H. Maxwell, Keyser
Glenn Moomau, Petersburg
B. F. Moyers, Matthias
J. A. Moyers, Franklin
Arnold A. Scherr, Keyser
E. K. Wilson, Romney
P. R. Wilson, Piedmont
J. H. Wolverton, Piedmont
M. F. Wright, Burlington
*Frank L. Baker, Burlington

Greenbrier Valley Society

O. P. Argabrite, Alderson
H. L. Beard, Lewisburg
C. R. Campbell, Williamsburg
J. M. Cofer, Slaty Fork
J. E. Coleman, East Rainelle
J. W. Compton, Ronceverte
J. W. De Vebre, Ronceverte
A. D. Ferrell, Ronceverte
T. L. Gilchrist, Pickaway
H. L. Goodman, Ronceverte
H. D. Gunning, Ronceverte
J. E. Hammer, Rainelle
U. H. Hannah, Cass
J. A. Jackson, Ronceverte
E. G. Kessler, Williamsburg
J. G. Leech, Quinwood
C. F. Mahood, Alderson
S. A. McFerrin, Renick
J. F. Moriarty, White Sulphur Springs
D. G. Preston, Lewisburg
N. R. Price, Marlinton
C. W. Rakestraw, East Rainelle
J. E. Taylor, Anjean
*W. P. Fawcett, Alderson

Hancock County Society

S. Beradeli, Weirton
Geo. H. Davis, Weirton
A. L. Eisner, Weirton
J. E. Fisher, New Cumberand
R. L. Focer, Colliers
F. B. Harrington, Weirton
I. Levendorf, Weirton
C. Moraitis, Weirton
G. E. Papadopoulos, Weirton
J. E. Richmond, Weirton
George Rigas, Weirton
A. B. Rinchart, Weirton
L. O. Shwartz, Weirton
L A. Whitaker, Weirton
Z. W. Wyatt, Weirton
J. L. Pyle, Chester

Harrison County Society

C. S. Bates, Lumberport
B. S. Brake, Clarksburg
E. H. Brannon, Bridgeport
J. T. Brennan, Clarksburg
J. R. Calder, Salem
S. L. Cherry, Clarksburg
C. C. Coffendaffer, Clarksburg
I. D. Cole, Clarksburg
J. E. Corbin, Clarksburg
D. P. Cruikshank, Lumberport
L. J. Currence, Clarksburg
Edward Davis, Salem
W. M. Davis, Bridgeport
Welch England, Clarksburg
H. H. Esker, Clarksburg
A. C. Flowers Clarksburg
E. N. Flowers, Clarksburg
E. Newton Flowers, Clarksburg
John Folk, Bridgeport
William Gaston, Clarksburg
W. B. Gaston, Mt. Clare
Wm. T. Gocke, Clarksburg
L. C. Goff, Clarksburg
O. S. Gribble, Clarksburg
G. E. Halyama, Clarksburg
W. P. Hammer, Lumberport
Alex Hannah Wilsonburg
H. H. Haynes, Clarksburg
E. A. Hill, Clarksburg
R. C. Hood, Clarksburg
Kenna Jackson, Wallace
C. C. Jarvis, Clarksburg
A. J. Kemper, Lost Creek
O. W. Ladwig, Wilsonburg
F. V. Langfitt, Clarksburg
D. Leeson, Clarksburg
R. H. Leu, New Martinsville
R. B. Linger, Lost Creek
R. V. Lynch, Meadowbrook
J. S Mallory, Shinnston
W. A. Marsh, Clarksburg
B. F. Matheny, Clarksburg
J. P. McGuire, Clarksburg
R. B. Nutter, Enterprise
R. J. Nutter, Clarksburg
C. R. Ogden, Clarksburg
R. L. Osborne, Clarksburg
W. T. Owens, Clarksburg
J. E. Page, Clarksburg
J. B. Payne, Washington, D. C.
C. L. Pearcy, New Milton
C. E. Peck, Clarksburg
E. Pendleton, Clarksburg
A. T. Post, Clarksburg
C. O. Post, Clarksburg
S. H. Post, Volga
E. M. Riley, Nutter Fort
H. A. Rosenthal, Clarksburg
Sylvia Saurborne, Clarksburg
V. A. Selby, Clarksburg
B. F. Shuttleworth, Clarksburg
C. N. Slater, Clarksburg
N. E. Sloan, Clarksburg
W. L. Strother, Wilsonburg
E. A. Teets, Clarksburg
W. L. Thomason, Clarksburg
E. D. Tucker, Nutters Fort
J. H. Underwood, Shinnston
E. F. Wehner, Clarksburg
H. A. Whisler, Clarksburg
J. F. Williams, Clarksburg
C. A. Willis, Charleston
E. A. Wilson, Salem
J. E. Wilson, Clarksburg
E. B. Wright, Clarksburg
*T. M. Hood, Clarksburg
*D. C. Louchery, Clarksburg

Kanawha County Society

M. J. Alexander, Highcoal
A. L. Amick, Charleston
Maury Anderson, Dunbar
O. L. Aultz, Charleston
Bankhead Banks, Charleston
D. N. Barber, Widen
T. M. Barber, Charleston
G. H. Barksdale, Charleston
W. P. Black, Charleston
B. V. Blagg, South Charleston
O. H. Bobbitt, Charleston
A. S. Boggs, Charleston
C. N. Brown, Swandale
R J. Brown, Charleston
R. K. Buford, Charleston
E. H. Campbell, Carbon
L. M. Campbell, Eskdale
J. E. Cannaday, Charleston
G. B. Capito, Charleston
T. J. Casto, Charleston
I. P. Champe, Charleston
V. T. Churchman, Charleston
V. T. Churchman, Jr., Charleston
C. E. Copeland, Charleston
E. A. Davis, Charleston
M. L. Dillon, Charleston
R. M. Dodson, Charleston
M. S. Duling, Charleston
J. L. Dunlap, Bancroft
R. H. Dunn, South Charleston
G. P. Fisher, Kayford
C. A. Fleger, Prenter
R. J. Ford, Charleston

R. I. Frame, Sharples
A. J. Given, Rensford
H. R. Glass, Charleston
M. V. Godbey, McKendree
M. D. Good, Charleston
T. B. Gordon, Widen
Fred Gott, Charleston
G. F. Grisinger, Charleston
J. H. Hansford, Pratt
A. J. Harness, Coalburg
E. R. Hatfield, Charleston
E R. Hays, Chelyan
E. B. Henson, Charleston
H. H. Howell, Madison
J. R. Hunter, Charleston
R. A. Ireland, Charleston
G. G. Irwin, Charleston
L. A. Jarrett, Dunbar
Ray Kessel, Charleston
Russel Kessel, Charleston
H. C. Kincaid, Charleston
A. C. Lambert, Charleston
R. H. Lewellyn, Elm Grove
Atlee Mairs, Charleston
C. B. Marshall, Nitro
U. G. McClure, Charleston
W. L. McElwain, Charleston
W. A. McMillan, Charleston
H. D. McPherson, Sharon
M. I. Mendeloff, Charleston
A. W. Milhon, Nitro
H. G. Nicholson, Charleston
J. W. Moore, Charleston
L. H. Mynes, Charleston
T. W. Nale, Charleston
A. B. Nelson, East Bank
R. O. O'Dell, South Charleston
D. F. Pauley, Jeffrey
L. A. Petty, Charleston
S. H. Phillips, Charleston
B. N. Pittenger, St. Albans
W. W. Point, Charleston
Owen Poling, Nellis
Wm. C. Polsue, Charleston
F. G. Prather, Barrett
B. S. Preston, Charleston
R. B. Price, Charleston
C. F. Raver, Charleston
C. A. Ray, Charleston
Roy Ray, Clendenin
G. A. Rigrish, Charleston
J. E. Roberts, Charleston
G. C. Robertson, Charleston
H. L. Robertson, Charleston
W. S. Robertson, Charleston
Hugh Robins, Charleston
J. U. Rohr, Charleston
R. D. Roller, Jr., Charleston
G. C. Schoolfield. Charleston
C. G. Scruggs, Putney
J. T. Sharp, Charleston
A. A. Shawkey, Charleston
W. S. Shepherd, Charleston
W. F. Shirkey, Jr., Charleston
G. W. Shriver, Charleston
J. R. Shultz, Charleston
J. S. Skaggs, Seth
J. W. Skaggs, Nitro
A. A. Smith, Ivaton
J. A. Smith, South Charleston
E. W. Smoot, Madison
S. B. Souleyret, Gamoca
H. H. Staats, Charleston
E. H. Starcher, Sharples
R. R. Summers, Charleston
B. H. Swint, Charleston
W. E. Taylor, Mammoth
John Thomas, Charleston
H. G. Thompson, Charleston
A. C. Vandine, Charleston
R. H. Walker, Charleston
R. H. Walker, Charleston
C. N. Watts, Charleston
F. P. Weltner, Charleston
B. B. Wheeler, Charleston
Wirt B. Wilson, Charleston
W. H. Wilson, St. Albans
R. E. Woodall, Charleston
J. A. Work, Blue Creek
W. F. Work, Charleston
*I. C. Carlisle, Charleston
*G. R. Davis, Charleston

Lewis County Society

G. M. Burton, Weston
S. H. Burton, Weston
E. R. Cooper, Troy
J. C. Corder, Jane Lew
M. D. Cure, Weston
W. H. Greene, Weston
E. T. W. Hall, Weston
C. L. Hudkins, Weston
D. P. Kessler, Weston
W. P. King, Weston
A. F. Lawson, Weston
C. B. Rohr, Alum Bridge
W. T. Smith, Glenville
George Snyder, Weston

Logan County Society

Z. M. Barden, Mallory
F. E. Brammer, Dehue
Jay R. Crawley, Big Creek
C. A. Davis, Logan
Dr. W. W. Duff, Taplin
H. H. Farley, Logan
W. F. Farley, Holden
S. J. Ferguson, Whitman
T. J. Ferrell, Chapmanville
W. S. Gilmer, Henlawson
W. J. Harless, Clothier
K. J. Heatherman, Omar
J. O. Hill, Logan
V. E. Holcombe, Logan
Augustus Holderfield, Man
B. E. Hunt, Holden
H. C. Jones, Logan
J. I. Justice, Logan
L. W. Lawson, Logan
S. B. Lawson, Logan
E. R. Logan, Omar
J. W. Lyons, Holden
C. A. Martin, Amherstdale
John W. McNabb, Monoville
W. H. Parker, Braeholm
Nathan Poliakoff, Monoville
R. W. Quaintance, Lundale
R. W. Roberts, Man
F. L. Round, Holden
W. S. Rowan, Logan
H. D. Smith, Omar
L. E. Steele, Logan
Mark Sutphin, Logan
W. J. Thomas, Taplin
E. B. Thompson, Ethel
R. R. Vaughn, Dehue
P. H. Wingfield, Logan

Marion County Society

W. R. Andrews, Fairmont
J. M. Barr, Middleton
L. H. Moyers, Fairmont
G. H. Brownfield, Fairmont
Carl J. Carter, Fairmont
Henry D. Causey, Fairmont
J. H. Clinton, Fairmont
James C. Collins, Fairmont
W. L. Coogle, Rivesville
H. L. Criss, Fairmont
L. C. Davis, Fairmont
D. P. Fitch, Fairmont
F. E. Flowers, Mannington
C. T. Francis, Fairmont
D. D. Hamilton, Mannington
M. F. Hamilton, Mannington
C. L. Holland, Fairmont
H. L. Horton, Fairmont
E. W. Howard, Fairmont
L. D. Howard, Fairmont
J. A. Jamison, Fairmont
J. J. Jenkins, Farmington
H. R. Johnson, Fairmont
Philip Johnson, Fairmont
H. S. Keister, Fairmont
G. L. Kinney, Ida May
L. R. Lambert, Fairmont
C. S. Lawson, Fairmont
Wm. J. Leahy, Mannington
G. F. Miller, Fairview
T. H. Miller, Fairmont
G. V. Morgan, Fairmont
J. E. Offner, Fairmont
W. W. Orr, Mannington
C. L. Parks, Fairmont
A. L. Peters, Fairmont
P. F. Prioleau, Fairmont
C. M. Ramage, Fairmont
J. A. Riedy, Monongah
F. B. Rogers, Fairmont
S. J. Skarzenski, Fairmont
A. W. Smith, Farmington
E. P. Smith, Fairmont
L. S. Smith, Monongah
F. F. Sowers, Fairmont
A. J. St. Lawrence, Fairmont
A. H. Stevens, Fayetteville
E. W. Strickler, Fairmont
K. Y. Swisher, Fairview
J. M. Trach, Fairmont
G. H. Traugh, Fairmont
J. R. Tuckwiller, Fairmont
F. W. Vance, Mannington
Chas. W. Waddell, Fairmont
W. A. Welton, Fairmont
R. S. White, Fairmont
H. R. Yost, Fairmont
Joe Yost, Fairmont
L. N. Yost, Fairmont
Paul Yost, Fairmont
*T. M. Calvert, Mannington

Marshall County Society

R. A. Ashworth, Moundsville
J. E. Arnold, Moundsville
P. D. Barlow, McMechen
W. P. Bonar, Moundsville
B. F. Bone, Moundsville
J. E. Cooper, Cameron
O. F. Covert, Moundsville
G. N. Cunningham, Glendale
D. B. Ealy, Moundsville
C. S. Fortney, Hundred
Mary J. Fortney, Hundred
W. B. Hartwig, Benwood
Wm. G. C. Hill, Cameron
C. E. Hutchinson, Moundsville
J. H. Luikhart, Moundsville
F. E. Martin, New Martinsville
L. H. McCuskey, Moundsville
C. R. McGuffie, Tunnelton
Chas. G. Morgan, Moundsville
J. W. Myers, Glendale
J. W. Niedermeyer, McMechen
J. C. Peck, Moundsville

John Pyles, New Martinsville
C. W. Riggs, Cameron
J. A. Striebich, Moundsville
H. C. Whisler, Smithfield
O. P. Wilson, Moundsville
S. F. Yoho, Franks
*M. A. Dowler, Glendale

Mason County Society

U. G. Arnett, Point Pleasant
H. A. Barbee, Point Pleasant
R. F. Bryant, New Haven
J. N. Fadeley, Point Pleasant
E. L. McElfresh, Point Pleasant
C. W. Petty, Hartford
R. W. Sayre, Point Pleasant

McDowell County Society

J. Howard Anderson, Hemphill
W. P. Bean, Keystone
J. A. Bennett, Algoma
R. K. Bragonier, Keystone
J. F. Cadden, Hemphill
H. G. Camper, Welch
J. W. Calvert, McDowell
A. B. Carr, War
W. A. Carr, War
A. L. Carson, Thorpe
L. H. Clark, Kyle
R. D. Clark, Caretta
W. E. Cook, Pageton
N. F. Coulton, Filbert
S. A. Daniels, Welch
J. E. Davis, Welch
C. E. Dyer, Roderfield
N. H. Dyer, Bartley
J. W. English, McDowell
G. P. Evans, Iaeger
H. P. Evans, Keystone
W. F. Ferguson, Premier
W. C. Hall, Welch
J. C. Harrison, Dan
D. D. Hatfield, Yukon
Chas. F. Hicks, Welch
C. R. Hughes, Kimball
Alex Irvine, McDowell
W. L. Johnston, McDowell
Manuel Justo, Welch
J. C. Killey, Vivian
E. C. Maphis, Panther
T. G. Matney, Iaeger
J. L. McCarthy, Berwind
J. C. McGuire, Caretta
R. C. Newkirk, Twin Branch
W. L. Peck, Coalwood
I. T. Peters, Maybeury
J. T. Peters, Gary
A. G. Rutherford, Welch
R. V. Shanklin, Gary
A. B. Spahr, New Hall
W. S. Steele, McDowell
W. B. Stevens, Eckman
G. L. Straub, Welch
M. H. Tabor, Crumpler
M. F. Torregrosa, Ashland
A. C. Van Rennen, Davy
E. E. Vermillion, Welch
C. W. Vick, Jenkin-Jones
E. M. Wilkinson, Welch
A. A. Wilson, Switchback
W. B. Young, Elkhorn
*P. H. Killey, Vivian

Mercer County Society

A. E. Amick, Bluefield
C. C. Ballard, Gap Mills
J. H. Bird, Rock
J. E. Blaydes, Buefied
J. R. Boyd, Oakvale
M. B. Caldwell, Matoaka
O. C. Campbell, Princeton
B. S. Clements, Matoaka
F. J. Collison, Bluefield
J. H. Craft, Springton
W. D. Fitzhugh, McComas
J. Francke Fox, Bluefield
P. R. Fox, McComas
H. H. Haggart, Cincinnati, Ohio
O. S. Hare, Bluefield
W. W. Harloe, Matoaka
A. H. Hoge, Bluefield
F. F. Holroyd, Princeton
Samuel R. Holroyd, Athens
E. W. Horton, Bluefield
S. J. Kell, Bluefield
J. B. Kirk, Bluefield
D. B. Lepper, Bluefield
David Littlejohn, Charleston
H. B. Luttrell, Bramwell
W. R. Morris, Alpoca
John McGuire, Bluefield
E. F. Peters, Princeton
C. J. Reynolds, Bluefield
F. S. Richmond, Bluefield
F. T. Ridley, Bluefield
R. O. Rogers, Bluefield
C. T. St. Clair, Bluefield
W. H. St. Clair, Bluefield
Chas. M. Scott, Bluefield
M. W. Sinclair, Bluefield
W. C. Slusher, Bluefield
C. W. Smith, Princeton
Ira M. Smith, Princeton
B. W. Steele, Mullens
H. G. Steele, Bluefield
R. R. Stuart, Bluefield
E. M. Tanner, Bluefield
G. T. Thornhill, Bluefield
G. L. Todd, Princeton
T. E. Vass, Bluefield
J. R. Vermillion, Princeton
Uriah Vermillion, Athens
W. H. Wallingford, Princeton
A. D. Wood, Bluefield
Ward Wylie Princeton
*A. H. Carr, Bluefield
J. I. Markell, Princeton

Mingo County Society

Thomas D. Burgess, Williamson
W. H. Burgess, Williamson
G. T. Conley, Williamson
George W. Easley, Williamson
Rush F. Farley, Delbarton
H. C. Hays, Williamson
L. S. Henley, Borderland
O. P. Hodge, Matewan
G. B. Irvine, Williamson
O. H. Jennings, Williamson
J. C. Lawson, Williamson
James G. Lowry, Delbarton
Frank Mosley, Williamson
P. P. Nottingham, Stone, Ky.
C. E. Peery, Glenalum
W. H. Price, Chattaroy
Fred R. Quincy, Williamson
B. J. Read, Red Jacket
A. S. Richardson, O'Keefe
R. A. Salton, Williamson
Henry C. Smith, Williamson
E. P. Stepp, Kermit

Monongalia County Society

P. P. Arbogast, Morgantown
M. L. Bonar, Morgantown
C. F. Boyers, Morgantown
Dorsey Brannan, Morgantown
C. M. Bray, Morgantown
M. H. Brown, Morgantown
Peter Caserta, Morgantown
L. W. Cobun, Morgantown
Forrest P. Coombs, Morgantown
Samuel W. Cottle, Morgantown
R. H. Edmondson, Morgantown
C. C. Fenton, Morgantown
R. W. Fisher, Morgantown
E. F. Heiskell, Morgantown
W. H. Howell, Morgantown
J. R. Hughart, Morgantown
Brinley John, Morgantown
B. Clifford John, Morgantown
Carl Johnson, Morgantown
C. Royall Kessell, Morgantown
Herbert V. King, Morgantown
J. P. Lilly, Morgantown
W. L. Madera, Morgantown
W. S. Magill, Morgantown
C. H. Maxwell, Morgantown
G. R. Maxwell, Morgantown
T. Jud McBee, Morgantown
Dewitt McDonald, Morgantown
W. H. McGaw, Purseglove
Cosimo Menzolora, Morgantown
S. J. Morris, Morgantown
W. C. Moser, Morgantown
George W. Phillips, Morgantown
H. H. Pierce, Morgantown
D. M. Post, Morgantown
H. C. Powell, Morgantown
R. Cole Price, Morgantown
C. B. Pride, Morgantown
C. C. Romine, Morgantown
F. T. Scanlon, Morgantown
Wm. B. Scherr, Morgantown
J. N. Simpson, Morgantown
A. E. Smith, Morgantown
B. M. Stout, Morgantown
Samuel F. Talbott, Morgantown
Alfred C. Taylor, Mona
E. R. Taylor, Morgantown
E. B. Tucker, Morgantown
S. S. Wade, Morgantown
C. B. Wylie, Morgantown

Ohio County Society

G. W. Abersold, Short Creek
D. M. Aikman, Wheeling
E. L. Armbrecht, Wheeling
Robert J. Armbrecht, Wheeling
Russel B. Bailey, Wheeling
J. T. Belgrade, Wheeling
D. B. Best, Wheeling
E. S. Bippus, Wheeling
H. W. Bond, Wheeling
J. R. Caldwell, Wheeling
H. P. Campbell, Wheeling
C. H. Clovis, Wheeling
E. E. Clovis, Wheeling
J. Plumer Cole, Wheeling
H. B. Copeland, Wheeling
W. A. Cracraft, Wheeling
W. M. Dalbey, Wheeling
H. N. Deem, Wheeling
Thos. F. Downing, Wheeling
R. U. Drinkard, Wheeling
A. C. Earnest, Wheeling
Louis B. Farri, Wheeling
Ivan Fawcett, Wheeling
W. S. Fulton, Wheeling
M. Gaydosh, Wheeling
J. Knox Gibson, Wheeling
R. D. Gill, Wheeling
J. W. Gilmore, Wheeling
Earl F. Glass, Wheeling
A. J. Goodwin, Wheeling
O. H. Griffith, Wheeling

H. M. Hall, Wheeling
H. C. Harpfer, Wheeling
A. N. Harris, Wheeling
H. A. Henderson, Wheeling
A. W. Higgins, Wheeling
Arthur K. Hoge, Wheeling
Thos. R. Hoge, Wheeling
J. O. Howell, Bridgeport, Ohio
Harry Hubbard, Tiltonsville, Ohio
Elizabeth Hupp, Wheeling
F. L. Hupp, Wheeling
A. L. Jones, Wheeling
E. Lloyd Jones, Wheeling
E. L. Kaufmann, Wheeling
W. K. Kalbfleisch, Wheeling
Chas. M. Kessor, Wheeling
M. S. Kelly, Wheeling
T. M. Klug, Wheeling
D. A. MacGregor, Wheeling
J. R. McClung, Wheeling
W. S. McClure, Wheeling
John H. McColl, Wheeling
A. V. McCoy, Triadelphia
O. D. McCoy, Wheeling
W. H. McLain, Wheeling
Mary B. Monroe, Wheeling
W. T. Morris, Wheeling
B. D. Morrison, Wheeling
Albert E. Nolte, Wheeling
A. J. Noome, Wheeling
H. E. Oesterling, Wheeling
E. M. Phillips, Wheeling
E. S. Phillips, Wheeling
Howard T. Phillips, Wheeling
E. B. Plant, Wheeling
W. A. Quinby, Wheeling
J. O. Rankin, Wheeling
R. J. Reed, Wheeling
R. J. Reed, Jr., Wheeling
A. F. Ruble, Elm Grove
J. W Rukman, West Liberty
W. P. Sammons, Warwood
Gustave Selhach, Wheeling
W. M. Sheppe, Wheeling
T. K. Shields, Elm Grove
R. J. Snider, Wheeling
O. M. Staats, Wheeling
J. G. Thoner, Wheeling
J. T. Thornton, Wheeling
R. A. Thomassene, Wheeling
S. W. Tretheway, Wheeling
C. M. Truschel, Wheeling
Max Vieweg, Wheeling
W. S. Webb, Wheeling
M. B. Williams, Wheeling
C. A. Wingerter, Wheeling
L. K. Zimmer, Wheeling
Matthew C. Zubak, Wheeling
*John T. Carter, Triadelphia
*J. Leonard Eskey, Wheeling
*B. F. Harden, Wellsburg
*H. P. Linsz, Wheeling
*J. Schwinn, Wheeling
*Robert M. McMillen, Wheeling
*J. J. Oshurn, Wheeling

Parkersburg Academy

W. A. Adams, Parkersburg
C. W. Albert, Parkersburg
O. D. Barker, Parkersburg
R. H. Boice, Parkersburg
Charles L. Boyers, Parkersburg
Rolla Camden, Parkersburg
W. C. Camp, Spencer
H. M. Campbell, Parkersburg
D. C. Casto, Parkersburg
O. J. Casto, Parkersburg
Orva Conley, Parkersburg
Ira Connolly, Parkersburg
R. Wiley Corbitt, Parkersburg
E. W. Crooks, Parkersburg
R. E. Davis, Parkersburg
A. Morgan Dearman, Parkersburg
U. L. Dearman, Reedy
E. H. Douglas, Petroleum
Z. B. Ferrell, Parkersburg
Mark O. Fisher, Parkersburg
H. E. Gaynor, Parkersburg
H. A. Giltner, Parkersburg
E. S. Goff, Spencer
E. T. Goff, Parkersburg
J. J. Goff, Parkersburg
W. R. Goff, Parkersburg
C. E. Grimm, St. Marys
T. L. Harris, Parkersburg
E. C. Hartman, Parkersburg
Geo. D. Jeffers, Parkersburg
A. P. Jones, Pennsboro
L. P. Jones, Pennsboro
T. W. Keith, Harrisville
C. D. Kraft, Parkersburg
J. C. Lawson, Auburn
John E. McQuain, Parkersburg
R. B. Miller, Parkersburg
E. D. Moyers, Cairo
C. L. Nuhleman, Parkersburg
R. H. Paden, Charleston
C. E. Park, Parkersburg
B. S. Parks, Parkersburg
S. M. Prunty, Parkersburg
C. W. Rexroad, Harrisville
W. B. Richardson, Parkersburg
B. O. Robinson, Parkersburg
J. G. Rogers, Parkersburg
L. O. Rose, Parkersburg
H. M. Rymer, Harrisville
Paul C. Starkey, Ravenswood
M. R. Stone, Parkersburg
H. H. Veon, Parkersburg
R. H. Wharton, Parkersburg
R. S. Widmeyer, Parkersburg
J. B. Wilson, Pennsboro
S. H. D. Wise, Parkersburg
E. L. Wright, Parkersburg
N. P. Yearly, Parkersburg
*W. T. Dye, Grantsville
*C. W. Alor, Parkersburg
*A. S. Grimm, St. Marys
*H. D. Price, Parkersburg

Preston County Society

F. A. Brown, Hopemont
W. F. Dailey, Terra Alta
H. M. Divvens, Masontown
G. F. Evans, Hopemont
F. D. Fortney, Newburg
L. H. Lewis, Kingwood
R. D. Harman, Kingwood
Etta Mason, Hopemont
Banche B. Miller, Eglon
H. N. Moser, Terra Alta
W. H. Post, Masontown
M. H. Proudfoot, Rowlesburg
B. S. Rankin, Tunnelton
D. J. Rudasill, Kingwood
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BRONCHIAL ASTHMA *

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Bronchial asthma may be defined as a disease syndrome characterized by paroxysmal dyspnea, orthopnea, bronchial edema, and cough. It may be considered as belonging to a related group, the other members of which are: hay fever, urticaria, recurrent eczema, and hyperesthetic rhinitis. We shall attempt to describe briefly the diagnostic procedures essential to the study of the asthmatic and to outline a rational therapeutic approach based on the results of these studies.

Method of Diagnostic Survey.—1. History: History taking in an asthmatic involves the asking of many questions not ordinarily included in the routine medical history. The time and duration of attacks, the age of onset, possible seasonal variation, the occurrence of cough and expectoration and observance by the patient of effect of extrinsic factors all are questions of the utmost importance. Specific inquiry should be made as to the effect produced by contact with definite substances, such as cosmetics, animal emanations, pollens, feathers, and dusts of various kinds. Heat, cold, humidity, and exercise should not be overlooked. The supposed causal connections of various foods with attacks should not be accepted unless established under control conditions. It is often desirable to encourage the patient to recount the entire story of his asthmatic life. The allergic family history should always be considered.

2. Physical Examination: Certain points in the general physical examination require special emphasis. The general habitus of the patient, especially in regard to the existence of a status lymphaticus constitution, is of interest. A dry, loose skin, with or without evidence of eczema, is often noted. Particular attention should be paid to the configuration of the chest and to the presence or absence of râles or of evidences of emphysema. A moderate superficial edema without cardiorenal involvement is sometimes seen.

The ear, nose and throat examination is of the utmost importance and should be carried out by a consultant who is actively interested in and fairly conversant with the relation of his specialty to this disease. The point to be emphasized is that nasal infection, rather than nasal obstruction, is to be searched for. The paranasal sinuses and the nasal cavity itself deserve the most careful scrutiny. The skillful use of the nasopharyngoscope is desirable.

3. Radiological Examination: The use of the x-ray in the study of asthmatics is chiefly of value in the accurate portrayal of the condition of the accessory sinuses. Transillumination can not be depended upon alone to demonstrate active pathology. Kern and Schenck[1] have shown that neither transillumination nor x-ray alone can be relied upon in every case. However, if the results of the two

* From the Division of Internal Medicine, Wheeling Clinic, Wheeling, West Virginia. Presented before the West Virginia State Medical Association at Martinsburg.

examinations are combined, then the percentage of accuracy becomes much higher. It is also essential in asthmatic work that any suspicious sinus should be visualized by iodized oil as advocated by Fraser,[2] E. L. Jones,[3] and others. It is only by this method that polyps, thickened membranes, and other evidences of chronic infection may be demonstrated.

It is probably true that every asthmatic should have an x-ray of the chest, as an occasional case is picked up in which there is some evidence of mediastinal involvement, such as aneurysm or tumor, which by pressure produces bronchospasm. The rôle played by enlarged lymph nodes in the mediastinum seems to be a matter of doubt at the present time.

4. Laboratory: The asthmatic as well as every other patient deserves certain routine laboratory work, which, of course, includes urinalysis, blood count, and Wassermann. In addition, there is certain special laboratory work which applies particularly to this class of cases. It is customary to estimate the amount of phosphorus and calcium in the blood. In uncomplicated asthma (*i.e.*, asthma which is not in association with certain skin diseases, such as chronic recurring eczema or icthyosis) we have been unable to demonstrate a reduction in calcium. It is difficult to state how much significance this last statement may have, as we are familiar with the normal blood calcium determinations in certain diseases known to be produced by a deficiency in calcium metabolism. On the other hand, the decrease in phosphorus is quite definite and we are in accord with the work of Sterling,[4] who believes that the reduced phosphorus metabolism is closely related to the deficient calcium metabolism, but that the best index of the two is to be found in the blood phosphorus estimation. The greater number of our cases of asthma are infectious in origin, and in this class of cases we have found surprisingly few instances of eosinophilia.

Skin tests are routinely performed upon all patients classed as asthmatics. Positive skin reactions are obtained in approximately fifty per cent of patients tested. However, by further study and close subsequent observations, we find that only twenty-five per cent of patients show skin tests which are believed to be of significance. The method in use at the Clinic is the scratch method. A preliminary test is made with thirty-five groups, each group containing three to five substances. If any group reacts positively, then the individual tests in that group are performed. The scratch method is used in preference to the intradermal method, as it seems likely that the latter gives rise to a much larger number of non-specific reactions and of reactions which apparently have no clinical significance. We hardly agree with Vaughan,[5] who feels that even the slightest reaction may be evidence of specific sensitivity. In our experience skin tests which have yielded information of clinical value have always been well marked. In addition, the practical difficulty of doing large numbers of intradermal tests is considerable.

5. Theories of Etiology: Numerous therories as to the causation of asthma have been advanced. It is difficult to explain this syndrome on a physiological basis without immediately encountering contradictions and even absurdities. The disease as encountered in man can not be correlated in all respects with the well-known anaphylactic phenomena in guinea pigs.

Certain facts, however, have been observed which are capable of correlation, and on the basis of these facts a working hypothesis may be advanced.

(1) Heredity. It is apparently well established that the inheritance of an allergic constitution is quite possible. From 55% to 60% of allergic patients give a history of familial involvement. It must be borne in mind that a member of one generation with hay fever may produce offspring who has asthma, and *vice versa*. The manifestation of the allergic constitution may be different in different generations or in different members of the same generation having a common parent.

(2) Allergic individuals have a low threshold of sensitivity of the nervous system, and this seems to apply particularly to the autonomic nervous system.

(3) The sympathetic nervous systems of these individuals are readily affected by the action of toxins arising from foci of infection. Teeth, tonsils and sinuses are the most frequent foci of infection.

(4) Such pathological studies as are available indicate that the end result of the physiological complex is constriction of the smooth muscle fibers of bronchi.

(5) Broncho constriction is produced by impulses traveling over the para-sympathetic fibers which reach the bronchi via the vagus.

(6) Adrenalin stimulates the sympathetic fibers, thereby inhibiting the para-sympathetic fibers.

(7) Afferent fibers pass from the nasal mucosa to the vagus center.

(8) Afferent fibers pass from the bronchial mucosa to the vagus center.

In view of the above rather definitely established

facts, we may consider that the sequence of events may possibly be as follows:

An individual is born with a definite allergic inheritance which provides him with a neurological and humoral make-up suitable for the development of asthmatic symptoms. He develops a focus of infection, which may be in the teeth, tonsils or sinuses, which lowers the threshold of sensitivity of his sympathetic nervous system. Impulses arise from the irritation of the nasal mucosa by infection or by reaction to specific allergens, and travel over the afferent fibers to the vagus center. Infection may act either as a direct irritant to the mucous membrane or by the effect of pressure on the mucous membrane by retained secretion. The impulses then having reached the vagus center, pass over the vagus nerve to the smooth muscle fibers, resulting in spasmodic broncho constriction. This results in edema of the mucosa and exudation of serum, and a chronic bronchitis is soon established. A vicious circle is then in action, as impulses arising in turn from the irritated bronchial mucosa may return over the vagus, stimulate the vagus center, and cause further broncho constriction. The effect of atropine and adrenalin furnish good pharmacological evidence of the course of the activating impulses. The situation is the same, whether the original impulse begins as a result of irritation by infection or the irritation of the allergen to which the patient is specifically sensitive.

The question of pressure seems to be of some importance, as we are all familiar with the sudden cessation in attacks, at times resulting from the mere washing out of an antrum or ethmoidal area. Again we frequently observe the cessation of attacks following the extraction of abscessed teeth or the removal of tonsils, thereby raising the threshold to a point at which the stimuli, although still active, are incapable of producing excitation. The effect of bronchial irritation is well exemplified in the frequent relief of the attacks following the emptying out of the retained secretions in the bronchi either by coughing or bronchoscopy.

It is at once apparent that much of the above reasoning is purely inferential and that there are large gaps in the chain of evidence. This is granted, and yet the facts presented are sufficiently established to serve as support for a good working hypothesis. A judicious mingling of facts and speculation is necessary for advance in any obscure field.

Treatment.—In the olden times this disease was spoken of as "phthisic." It was recognized at a very early date, and the accumulation of remedies for its relief has been going on since the days of ancient medicine. The number of remedies advocated is evidence of the inefficiency of all of them. It is only within the past fifteen years that any consistent attempt has been made to raise the therapy of this disease from empiricism and place it on a somewhat more rational basis.

(*a*) Specific treatment: In a certain small percentage of cases, asthma is found to be due to one or several specific proteins. In such a case the simple withdrawal of these proteins from contact will result in alleviation of symptoms. An example of this is the well-known advice to asthmatics to eliminate feather pillows from their households. This is good advice, of course, if the patient is sensitive to feathers; otherwise it is worthless. Due to the fact that house dust contains a variety of substances, and that casual contact is difficult to avoid in many instances, the patient must be desensitized to the specific protein or proteins involved. This is rather a lengthy procedure, comparable to the modern treatment of hay fever except that it is somewhat more prolonged. If the protein has been identified without question, the results in this type of case are uniformly good.

(*b*) Rhinological: As has been stated above, the removal of turbinates and straightening of septa has never proven of any value in any case. The only nasal surgery which should be considered is the promotion of free drainage or the removal of infected tissue. This applies to polyps and grossly infected mucous membrane linings of the sinuses. The antra are the sinuses most often at fault. Intranasal drainage of the antra is not sufficient if they are actually infected, as in most cases the infection is extremely chronic in nature and a radical procedure, such as the Caldwell-Luc operation, is indicated. It is again emphasized that this procedure has no value alone, or, at least, only temporary value, but must be combined with all other measures to be outlined below. Infection in the ethmoidal and sphenoidal cells is less common, but when present is of great importance. The use of the Dowling tampon and elimination of infection in the ethmoidal area seems to be of value, although this is contrary to the idea of many capable rhinologists. We have never felt it advisable in a single case to recommend the radical drainage of the frontal sinuses, believing that in this instance intranasal treatment is quite successful.

We can not feel that cocainization of the sphenopalatin ganglion is indicated. At best it can be only

palliative, and from personal experience the procedure is unsuccessful.

(*c*) Vaccine therapy: The discussion of this important phase of the subject could well occupy a large volume. While many facts have been established in the field of immunity, yet the application of these facts to clinical problems is very difficult. It has been estimated that only three per cent of our present serological knowledge can be applied to clinical problems. It is this gap which makes vaccine therapy so uncertain, and we must be guided in its use by close observation of clinical results.

(1) Method of preparation of vaccine: Material may be from sinus washings, mucus aspirated by bronchoscope, or from the deep sputum. The latter, of course, is the most usual source. Our procedure is as follows:

The deep sputum is collected in a sterile jar shortly after the patient arises in the morning. It is sent at once to the laboratory. Cultures are made from the sputum on blood agar plates. To the remainder of the sputum is added an equal amount of salt solution. It is then incubated over night and the resulting liquefied sputum is passed through a Berkefeld filter. This filtrate is used for the suspension of the bacteria in preparation of the vaccine. In this way we attempt to include not only the bacteria themselves but also the endotoxins and bactericidal substances from lysed organisms. The organisms are added to the filtrate until the density of the vaccine is about that of the ordinary typhoid vaccine. Three-tenths per cent cresol is added as a preservative and the vaccine is sterilized at 60° for forty-five minutes. Test cultures are made and sterilization is repeated if there is any growth.

(2) Dosage: We are firmly convinced that the dosage of most vaccines is much too great in the treatment of asthma. The dosage schedule which we ordinarily use is as follows:

VACCINE SCHEDULE

Injection No.	Amount	Injection No.	Amount
1	0.05 c.c.	16	0.4 c.c.
2	0.1 c.c.	17	0.4 c.c.
3	0.1 c.c.	18	0.4 c.c.
4	0.1 c.c.	19	0.5 c.c.
5	0.1 c.c.	20	0.5 c.c.
6	0.15 c.c.	21	0.5 c.c.
7	0.2 c.c.	22	0.6 c.c.
8	0.2 c.c.	23	0.6 c.c.
9	0.2 c.c.	24	0.6 c.c.
10	0.2 c.c.	25	0.8 c.c.
11	0.25 c.c.	26	0.8 c.c.
12	0.3 c.c.	27	0.8 c.c.
13	0.3 c.c.	28	1. c.c.
14	0.3 c.c.	29	1. c.c.
15	0.3 c.c.	30	1. c.c.

The dosage interval for the first ten doses is every fourth day. The vaccine is then given once a week.

A tuberculin syringe is necessary for the administration of vaccines.

If any reaction occurs or symptoms are increased we return to the previous dosage. It is noted that the dosage is kept very small and is very gradually increased. The duration of administration of this dosage is very considerable, but it is only by such prolonged procedure that results may be obtained. It is probable that the procedure is one of desensitization to bacterial products rather than the development of an active immunity as in the prophylactic use of the ordinary vaccine. We have not used the pathogen selective method for determining the bacteria to be incorporated in the vaccine. Studies along this line are undoubtedly demanded at the present time.

We feel that, lacking an autogenous vaccine, a stock vaccine has definite value. This should be employed in the same cautious dosage.

(*d*) X-ray: The use of the x-ray is still *subjudice*. Good results have been reported, but in many instances the results are poor. The action of the x-ray in these cases is probably not a result of a decrease in size of the mediastinal lymph nodes. It seems more likely that it is a desensitization of the vagus nerve endings—an effect which has been observed at times in the treatment of whooping cough by x-ray. I have had no personal experience with other physical modalities, such as diathermy, infra-red, and violet ray. Their use does not seem to be established on a rational basis.

(*e*) Bronchoscopy: This procedure is, undoubtedly, indicated in certain patients who have suffered from asthma for years and have their bronchi plugged with a thick mucoid secretion. Repeated bronchoscopic aspiration of the material is markedly beneficial. To be effective, bronchoscopy must be repeated at intervals for a period of eight or twelve months. It should be remembered that if the smaller bronchi are blocked with thick mucus, their walls are held together and can not dilate, thus explaining some of the failures of adrenalin in old asthmatics. I have never had a patient bronchoscoped while in an acute attack, but will not hesitate to do so at the first opportunity.

(*f*) Surgery: The extraction of all abscessed teeth is indicated at all times for reasons stated above.

Cervical sympathectomy has been advocated, but we believe this to be a futile measure.

Attempts have been made in animals to sever the branches of the vagus passing to the bronchi. The approach in this instance was through the posterior mediastinum. Following the section of these branches, it was found impossible to produce broncho constriction. This has not been attempted in man, and the technical difficulties are, of course, considerable.

(*g*) Breathing exercises: We require all of our asthmatic children to have ten minutes of breathing exercises each day. They are required to stand erect and inspire and expire the air very slowly, filling the lungs completely at each respiration. During an attack of asthma this voluntary control is, of course, entirely lost.

Medication.—Although efforts are constantly and persistently being made to modify the course of bronchial asthma by rational and more or less specific treatment, yet the symptomatology of the patient often demands that immediate relief be afforded. In fact, while the search for new methods in the treatment of this disease goes on, we must not overlook the definite effects which may be obtained from medication. A judicious mingling of drugs, particularly when the patient is first seen, often establishes temporary relief and serves to reassure the patient and establish coöperation.

(*a*) Adrenalin: Since the development of adrenalin it has occupied an important place in the treatment of asthma. It is used freely by physicians and also by patients. Without question adrenalin is the most effective agent for relaxing a constricted bronchial musculature. It is available both in tablets and in solution, the solution being contained both in ampules and in bottles. It is rather unsafe to allow patients to continually use the adrenalin from a one- or two-ounce bottle, as contamination may readily result with subsequent infection. The ampules, while more expensive, are most frequently used. The administration of the drug in tablet form (tablets are 1/200 and 3/200 grain, respectively) is slightly more difficult for the average patient. The impression is gained, however, that the drug is more potent in this form, as smaller doses seem to suffice. It is probable that the ordinary dosage is considerably too large, and that the unfortunate side actions of the drug, such as tremor, tachycardia, and subjective nervousness, may largely be avoided. It is our custom not to give over eight minims at any one dose. It is very easy to repeat the dose, but it is impossible to reduce a larger dose, once given.

The question arises whether the dose of adrenalin must be gradually increased over a period of time in order to be effective. There is no definite evidence to show that a patient gains tolerance for the drug, as is so common with narcotics and other potent drugs. Many patients control their attacks over a period of years with dosages of five or six minims, and there are instances on record in which very large doses have been taken over rather prolonged periods of time. The increase in dose is probably an effort on the patient's part to secure the effect of the drug which is lost due to various mechanical factors. These are not examples of an increase in tolerance. Where these massive doses are taken over a long period of time, we have observed progressive loss of weight, tremor, drying of the skin, and pigmentation. It is quite unnecessary to administer large doses. The same result may be obtained with a moderate dose, repeated if necessary. If the bronchial musculature does not respond to the ordinary dose, it is evident that other factors are at work, such as the adhesion of the walls of the bronchi by thick mucus, and steps should be taken to remove this complication. It has been found that if the point of injection of adrenalin is massaged vigorously one to two hours after its administration, further increments of the drug will be absorbed and the typical adrenal effect produced. This is a great convenience for patients who do not administer their own adrenalin and who live some distance from the physician. When a large dose of adrenalin is deposited in the subcutaneous tissue, only a portion is absorbed, as the vasoconstrictor action of the drug prevents rapid or complete absorption. A second method to overcome this and obtain the full effect of the drug is by making the injection at several different points; that is, the method of multiple puncture.

The chief disadvantage of adrenalin is that, due to its rather potent influence in relieving symptoms, too great a reliance may be placed on the drug and no efforts made along other lines to affect more permanent relief for the unfortunate sufferer.

In the last two years some experimental work has been directed toward the addition of pituitary extract to adrenalin. The advantages claimed are increased physiological activity and prolongation of effect. Several remedies under various trade names are now on the market in which the two glandular products are combined. It is probable that the extract of the hypophysis is capable of enhancing the effect of the epinephrin.

(*b*) Ephedrine: This drug, while relatively new,

has come into extensive clinical use. Its action is much the same as that of adrenalin, but it is milder in character and the effect is more prolonged. It has the added advantage of oral administration. On the other hand, the drug is poorly tolerated by many patients, producing nause, vomiting, and anorexia. In my experience it has been of value in mild cases of infectious origin occurring in elderly people. The more severe types of sthmatic paroxysm are not affected by the drug.

(*c*) The expectorant drugs have always occupied a definite place in the treatment of asthma, and of these drugs potassium iodide is always of most value. We ordinarily administer it as fifteen minims of the saturated solution after each meal in half a glass of water. Larger doses than this are unnecessary, as the drug simply leaks over into the urine and is lost.

(*d*) We have not noted any therapeutic results which might be attributed to the administration of calcium. The drug has always been administered by mouth, as it is impracticable to give this drug over a long period of time by vein. Following the work of Sterling, we administer phosphorus routinely to all allergic children. It has apparently been of value. It is prescribed as one dram of oil of phosphorus in four ounces of cod-liver oil, the dose being ten minims of the mixture twice a day. It is very easy to give an overdose of phosphorus, the chief symptom being loss of appetite. It apparently has been of benefit in children who suffer with recurrent or asthmatic bronchitis. These are usually children of allergic parents. Many times they seem to inherit a sensitivity of the bronchial mucosa, which manifests itself as repeated attacks of acute bronchitis and tracheitis without the production of actual asthmatic paroxysms.

The use of belladonna or other drugs depending upon atropine action is somewhat disappointing. One would expect atropine to have a rather specific effect upon the vagus end-organs, but the drug falls far behind adrenalin in its effect upon the sympathetic nervous system.

We oppose very definitely the use of narcotics, particularly morphine, in the treatment of an acute attack of asthma. The narcotic tendency of many asthmatics is well known, and I have seen instances in which the insistence of the patient broke down the resistance of the physician to such a point tha he administered morphine on the slightest indication of respiratory distress. To suffer from asthma is unfortunate; to be a morphine addict is doubly unfortunate—but to have asthma and also to be a morphine addict is a calamity.

We have found, in the treatment of an acute attack, that an ounce of whiskey and ten grains of aspirin will often relax the bronchi to a remarkable extent. Where a satisfactory alcoholic product can be obtained, the physician may feel quite safe in administering it. Many times a single administration of this combination is sufficient.

Prognosis.—In attempting to discuss the prognosis of a chronic disease of obscure etiology, such as we have in asthma, a sharp contrast should be drawn between "cure" of the disease and "relief." Very few asthmatics can be permanently cured in the sense that they will never have a recurrence of their symptoms. On the other hand, a large proportion of asthmatics may be relieved. We have found that the amount of relief obtained and its permanency depends to a great extent on the coöperation of the patient, and it is our custom to have these patients report to us once a month, whether they are having symptoms or not, as it is only by this method that infection may be kept at a minimum and severe attacks abated. In this respect the disease is somewhat similar to diabetes mellitus and to nephritis. No one has ever been so bold as to state that they have effected a cure in either condition, but both are fairly readily controlled by careful observation and continued treatment. If the asthmatic can achieve the same viewpoint that the diabetic does, he can be made to live a very comfortable life.

As in the management of all chronic disease, the prognosis must depend upon many factors, both intrinsic and extrinsic; for example, from the physical standpoint, the presence or absence of a marked chronic bronchitis or the presence or absence of a marked emphysema. Both contribute to the difficulties of treatment and the length of time which must be consumed in bringing the symptoms under control. In addition, the main etiologic factor must be considered in venturing a prognosis, as the final outcome varies considerably in cases which are due to infection and those which are produced by some specific allergen.

Again, the age of the patient is often a deciding factor. We find that patients below the age of fifteen, while they often present greater difficulties at first, eventually obtain a higher percentage of relief than do older patients. This may be explained by the greater ease of elimination of foci of infection in children and by the fact that their mode of life may be more readily controlled.

In addition to the above considerations, the economic status of the patient, his intelligence and willingness to coöperate, his geographical situation, and his occupation all tend to influence the final outcome, and all must be taken into consideration when estimating the chances of relief in any given individual. It is extremely important, also, that these unfortunate patients should receive constant encouragement, as there is undoubtedly a very definite neurotic factor in most asthmatics, and I have encountered many cases in which some slight disappointment or trivial altercation was sufficient to excite a severe attack. It is only by constant support and by constant effort on the part of the physician that such a patient is encouraged to follow out directions which are given him and to keep in close contact for more or less continued study and treatment.

Summary.—We have attempted, in a hasty fashion, to review the methods by which we approach the unfortunate patient who comes to the Clinic complaining of "asthma." In addition, we have formulated a theory of etiology which has a more or less physiological and pharmacological basis and which may serve us as a working hypothesis.

The forms of treatment which have been most successful in our hands and in the hands of others have been reviewed and classified.

We have attempted throughout to avoid painting the situation in colors which are too glowing, or to indicate that the road to success in these cases is easy or quickly found. The percentage of success may vary from a meager ten per cent to a satisfying ninety per cent. The factors which cause this marked variation are to be found in the above discussion. Some are controllable and some are beyond our control. We have attempted to show, however, that the asthmatic should not be regarded simply as a nuisance who can not be kept out of the office and who has a disease for which nothing can be done. It is admitted that, in some cases, symptomatic treatment alone has to be relied upon; but it is to be emphasized that more specific forms of treatment are at hand, and that, while symptomatic therapy with familiar drugs is of value, its worth may be tremendously enhanced by a more extensive study and more vigorous measures of treatment.

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AGGLUTININS FOR BRUCELLA ABORTUS IN HUMAN SERUMS IN WEST VIRGINIA *

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The problems of medicine, like those of commerce, finance and daily life, change from year to year. If toxin-antitoxin campaigns and water sanitation overcome diphtheria and typhoid, then heart disease and nephritis take their place. Yellow fever has practically disappeared from civilized countries, but other diseases, less virulent, it is true, arise in its stead. With the decline of typhoid fever, tularemia becomes increasingly prevalent. And now, to increase our difficulties, undulant fever is being more frequently reported from one state after another.

The disease is by no means of recent origin. It is not improbable that it is the disease described by Hippocrates as a protracted fever lasting 120 days and marked by intermittent recurrences. It has been definitely known along the Mediterranean throughout the nineteenth century under various names such as Malta, Mediterranean, mountain or goat fever, or as Mediterranean tuberculosis, because of the anemia and profuse night-sweats characteristic of the febrile stages.

The etiology was solved in 1886 by the studies of David Bruce, who isolated an organism which he called *Micrococcus melitensis*, from the spleen of a human case as well as from goats and goats' milk. The epidemiology was solved by a British medical commission in 1904, under the leadership of Bruce.

For a time the disease appeared to be confined to the region of southern Europe, but as early as 1905 the first case in the United States was reported by Craig.[1] Since that time many cases have been observed in this country, chiefly in Texas, and usually with a definite history of contact with goats or the use of goats' milk. However, increasing numbers of

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cases are being reported from other states in which such contacts are eliminated, and instead there is a history of contact with swine, cattle, or the use of raw cow's milk.

The relationship between the germ of Malta fever from goats and the Bang bacillus (*Brucella abortus*) from contagious abortion of cattle has been long suspected, but it was the work of Dr. Evans, of the U. S. Hygienic Laboratory, which proved the practical identity of the two organisms in 1918. These organisms are now generally classified respectively as *Brucella melitensis* and *Brucella melitensis* (variety abortus), and they are distinguished only by delicate serological tests, and, to a degree, by their pathogenic action on laboratory animals.

In 1924 Keefer[2] reported a case due to the abortus variety, which appears to be the earliest recorded human infection. In this case goat's milk was ruled out. While the source was not traced, the patient drank much cow's milk. *Brucella abortus* was isolated by blood culture. DeKorte,[3] in 1924, reported a case traced to handling the placenta of an aborting cow, while Duncan[4] reported the identification of the abortus variety isolated from a butcher. Clark[5] reports 23 cases of the abortus variety determined in the preceding five years by the U. S. Hygienic Laboratory. Of these, 8 were traced to milk, 2 to laboratory infection, and 6 to handling sick cows or pigs. It is of interest to note that these were from eleven different states, indicating the widespread distribution of the infection. In all, up to the present date, some 150 cases in the United States have been traced to *Brucella abortus*.

Health News, of New York, recently reported an interesting case of a health officer who persisted in the use of raw milk from a small herd under personal observation. *Brucella abortus* was isolated from his blood, and he spent six weeks in bed and lost 25 pounds weight. All of the animals in the herd proved reactors, and the organism was recovered from the blood of one.

Hardy[6] reports the diagnosis of 83 cases in Iowa within a year. In no case was the infection traced to goats. In 52 cases the evidence indicated a bovine source. In 11 instances swine were indicated as the probable source.

We have been recently advised of a fatal case in a young man 21 years of age, the brother of a student in our university. Although complete information is not at present available, the indications are that the infection was contracted from the milk of the family cow.

Carpenter[7] reports 52 cases in and about Ithaca, N. Y., of whom, with one exception, all were persistent drinkers of raw milk.

Similar instances might be cited almost indefinitely, but these few serve to indicate the commonly accepted opinion that the disease, undulant fever, as it exists at present throughout our country, is beyond question largely of bovine origin, and is undoubtedly more prevalent than is commonly suspected.

Since Bang[8] in 1897 first isolated the organism, it has been repeatedly found in cow's milk by Schroeder and Cotton[9] in some 14% of milk samples from 10 dairies; by Smith and Fabyan,[10] and more recently by Carpenter and King,[11] from cattle and, particularly, cow's milk, in a number of cities of northern New York. They isolated *Brucella abortus* from two herds furnishing grade A raw milk and certified milk. In two herds, 94% and 63% were blood reactors, and 25% and 36% were discharging the organisms in their milk.

They found 29% of cattle supplying the Metropolitan Life Insurance Company sanatorium in New York to be discharging the bacillus, and found agglutinins in the serums of 13% of the patients and staff who were consuming raw milk from this infected herd. Of 690 patients in three sanatoria in Massachusetts, using only pasteurized milk, not a single serum showed agglutinins.

It has been persistently argued that abortus agglutinins in human serums are passively acquired by drinking milk containing a high titer of such agglutinins. However, experimental consumption of a quart of milk daily, with an agglutinin titer of 1–400, failed to show agglutinins in the serum of adult volunteers, and Carpenter concludes that the presence of agglutinins suggests active infection rather than passive absorption.

Acting on this latter assumption, we undertook a survey of human serums in West Virginia to determine what evidence of the infection exists within our state. Serums were obtained weekly from the State Hygienic Laboratory.[12] From 150 to 300 serums were received weekly over a period of eleven weeks, from January 10 to March 22, 1929. Practically all of these had been submitted for routine Kahn tests, although a few Widals and two tests for tularemia were included. Coming, as they did, from all counties in the state, we felt that in this way we could make a hasty survey and a rough estimation of the presence and prevalence of the infection. During this period we received and examined 2,521 blood specimens, representing a fair

cross-section of the chiefly adult population. We had desired to continue this study over a total of 10,000 specimens, but the press of other duties necessitated an earlier termination of the work.

Because of other duties it was necessary to reduce the technique to the simplest form. In the early work we therefore used serum dilutions of 1–25, 1–50, and 1–100, pipetting the serums directly into three tubes with 1/10 ml. pipets, then adding 1 ml. of antigen to all tubes. The antigen was prepared by growing two strains of *Brucella abortus* of bovine origin (one B. A. I. 19 strain, isolated in 1927, obtained from and used by Dr. Rietz of the veterinary department of the university in routine cattle testing; the other isolated in 1918 by L. P. Doyle of the veterinary department of Purdue University), on North's gelatin agar in whiskey flasks for four to five days. These cultures were washed off in saline solution to which 1–1000 formalin was added to check growth during the incubation period. The antigen was diluted to about 500 p.p.m. and was prepared fresh each week and used unheated.

All tests were incubated at 37° C. overnight, then 8 hours in the ice-box, and were read at about 20 hours. The results of these tests are presented in Table I.

TABLE I: SHOWING INCIDENCE AND REACTIONS OBTAINED FROM 2,521 HUMAN SERUMS

Number of Specimens	Serum Dilutions 1–25	1–50	1–100
1	++++	++++	++++
1	++++	++++	+++
1	++++	+++	++
1	+++	+++	++
2	++	++	+
9	++	+	±
13	+	+	±
15	+	±	—
184	±	±	—
63	±	—	—
2,231	—	—	—

The six serums in Table I, which showed 2-plus or better in dilution of 1–50, were retested in higher dilutions. On this retest an accurate 1–10 stock dilution of the serums was diluted further with saline through six tubes. Double-strength antigen was then added in equal volume to all tubes. The reactions were determined as above, and the results are given in Table II.

A brief questionnaire was addressed to the physicians who had submitted the six strongly reacting specimens, requesting information on the case histories of the patients. Replies were received from five physicians. These replies are abstracted below:

Case 776, reported by Dr. Clara Shunk, Charleston: "Mrs. H., a white woman, 23 years of age, weight 105 pounds. Has given birth to two children, one stillborn. Had a miscarriage of a six-weeks pregnancy about three years ago. Second child a cesarean delivery in 1925. For about eight or nine years has suffered backache, first in lower dorsal, lately in lumbar region. Pain pronounced on awakening, radiating down legs. Hot baths relieve, but only temporarily. She has never been around cattle, but drinks milk moderately.

This case is indefinite but suggestive, particularly the protracted backache. Considerable surgical work has been done, and the condition may easily be referred to other causes, which, however, would not explain the presence of *Brucella abortus* agglutinins.

Case 699, "Mrs. J.," reported by Dr. J. E. Corkrean, Jane Lew, is indefinite: White woman, 35 years of age (recently died of uterine carcinoma); syphilitic with 4-plus Kahn. About a year ago had profuse uterine hemorrhages. Had been working in an insane asylum near Pittsburgh.

In view of the reports of Carpenter and others on the common incidence of the infection in similar institutions, there may be only a reasonable suspicion of infection in this case.

Case 705, "Mrs. D.," reported by Dr. R. M. Wylie, Huntington, from a small village in Wayne county. History negative as to known association with aborting animals or handling of meat products. Source and amount of milk drunk not stated. Has never aborted. At one time thought tuberculous, but x-ray reported negative. Contracted syphilis some 12 months ago, which appears to be the extent of present infection.

This case also indefinite. Suspicion of tuberculosis, with negative x-ray, would be suggestive, in

TABLE II: RETESTS OF STRONGLY POSITIVE SERUMS

Patient Card File Number	Serum Dilutions 1–40	1–80	1–160	1–320	1–640	1–1280
699	++++	+++	++	+	±	—
705	++++	++++	+++	+	±	—
798	++++	++++	+++ +	++	+	—
681	+++	+++	++	±	±	—
776	++	+	±	±	—	—
845	++	+	±	—	—	—

view of the resemblance of undulant fever to incipient tuberculosis.

Case 681, reported by Dr. H. B. Robins, Charleston, was negative as to known association with aborting animals or handling of meat products. Age, sex, and other data not submitted.

Case 798, reported by Dr. A. D. Knott, Parkersburg, was most interesting. "Mr. R." had severe attack of typhoid fever some 15 years ago; in bed for two months. Inoculated in army for typhoid and paratyphoid. Also had typhus serum (?) in army. Worked with meat products some years ago. Does not know of any other illness.

Some weeks later we received a second letter from Dr. Knott, stating: "Mr. R. spent about a year in a Baltimore hospital, some years ago, under treatment for an ulcerated stomach. During that time he was given goat's milk as part of his diet."

From Table I it may be observed that 28 serums (1.1%) of 2,521 tested reacted to dilution of 1–100. We would be reluctant to consider reactions to a lower titer as being of significance. Although the limited epidemiological evidence available is decidedly inconclusive, we feel that we have evidence of the existence of the infection in West Virginia.

Also, in view of the records supplied by Dr. Rietz of the university dairy department, contagious abortion is known to exist in practically all of the dairy herds throughout the state. From his records of tests of 478 head of cattle from 20 herds, 116 (24%) were reactors. If we eliminate the Wardensville herd, and one other in Charleston, where an intensive sanitary program has been in effect for several years, we find that, of 319 animals tested and kept under average herd conditions, 116 (36%) reacted. This latter figure probably represents roughly the extent of infection in our herds under conditions of normal management.

Carpenter, Baker and King have reported the presence of *Brucella abortus* in market milk from 9 of 50 dairies, and in 20% of raw market milk samples from 67 towns in New York. Admitting that, in our state, at least 25% of dairy cattle are reactors, and that at least 10% of these are constant or intermittent excretors of the organism in their milk; that we had in 1926, from the U. S. Agriculture Year Book, some 484,000 head of dairy cattle, and 189,000 swine, which are also susceptible to the disease, and are a known source of many cases of human infection, we must admit that we have a sanitary situation which requires attention.

New York state added undulant fever to the list of reportable diseases in December, 1928, and New York City now runs the agglutination test as a routine on all suspected typhoid serums. We understand that this procedure is to be undertaken in our state laboratory. Although our rather limited study does not indicate the existence of any considerable number of cases, we feel that this decision is to be commended.

Finally, there are many cases of human infection traced beyond question to the use of raw cow's milk, but not a single recorded instance traced to pasteurized milk. Experimentally, it is shown that *Brucella abortus* is destroyed in 15 minutes at 143° C. Pasteurization, therefore, for 30 minutes at this temperature, constitutes a practically specific prevention of cases from this source.

Cattle may be visibly normal, yet excrete the organisms in large number in their milk. While it is possible to determine their presence in milk, practically it is out of the question as a routine method. We may then add undulant fever to the list of tuberculosis, typhoid, diphtheria, scarlet fever, and other milk-borne diseases, all of which may be prevented largely by simple pasteurization.

This, of course, will not prevent contracting the disease through contact with infected animals, as by veterinarians and packing-house workers. For these, protection depends on elimination of the infection from the herds of swine and cattle. The methods of doing this are well understood, and require only the strict application of testing and segregating or eliminating of the reactors. Wardensville has demonstrated the possibility of building up a clean herd. Others may well follow this example.

Discussion

DR. R. C. HOOD (Clarksburg): I think we ought to have more discussion on this particular topic. Three of my friends have had this infection during the past year. I think it would be very good for us to think over possible cases of this kind. One man received his as a laboratory infection at Harvard; another received his as an attending physician for a large insurance sanatorium from their herd, and a third one received his infection from delivering a cow with a retained placenta. I don't think that we can emphasize too much how serious this thing is. I have just been thinking over this question and wondering whether it might not be a good idea for us to go into this a little more thoroughly and see what steps could be taken, if necessary, to prevent its spread throughout West Virginia. We have

to depend on such thorough work as Dr. Spray has given us to prevent the spread of such a disease, and I wonder whether we can go on record as appointing a committee to determine whether we should suggest the pasteurization of all milk used for infant feeding in the state. That is a big program, but we have experimental work of this kind to back us up in such a suggestion. I previously have fed large numbers of my infant patients on raw milk, but I am wondering if, in the future, I will continue to do so.

DR. DAVID LITTLEJOHN (Charleston): At the present time, practically speaking, all the states in the Union are being confronted with the problem of this condition which Dr. Spray has brought to our attention. So far, West Virginia has to a large extent been exempt from known cases of the disease. But the frequency with which they have been occurring in the states surrounding us makes us wonder how long we are going to be exempt from it.

I sometimes have wondered if some of the rather vague paratyphoid cases, for example, of which we have been receiving reports, might not in some instances have been attributable to the *Brucella abortus*. We know that that is one of the diseases with which this condition has been confused, especially in places where it has not been brought forcibly to the attention of the physicians who are not familiar with the conditions which produce it. Under such circumstances we are very apt to overlook the fact of the possibility of this condition existing. It is in line with this thought that, at the state laboratory, we have decided that henceforth every specimen of blood which is sent for a Widal test, and which shows negative, shall be tested for the agglutination for *Brucella abortus*. In this way we will probably be able to check up on some of these conditions from which in the past we have not been able to get any positive Widals from the blood and which to all intents and purposes look like they might be types of typhoid or paratyphoid.

The work which Dr. Spray has done in bringing this to the attention of the members of the profession in West Virginia is going to make us be on the alert and look for this as a possible cause in some of these vague conditions which we meet and in which our diagnosis is sometimes rather indefinite. For that reason, I think we are very much indebted for the work which Dr. Spray has done in this connection and for his bringing it to our attention at this time. I hope that, through the work which he has accomplished, the members of the profession in West Virginia will be on the lookout and help us guard against the spread of this infection.

From the number of cases of contagious abortion reported among cattle throughout the state, it is almost humanly impossible to think that we are going to escape it, because in some counties it has been found that the percentage of infection among the cattle runs up to fifty and sixty per cent. In these places I don't see how the infection is going to be prevented, unless we absolutely know the conditions and are on guard to take the precautions which will be necessary in order to protect the people in these various communities.

DR. C. A. RAY (Charleston): I have been anxious to hear the report of the committee appointed for consideration of the president's address, and suggest that this is an impetus for the medical profession of West Virginia and the Medical Association of West Virginia to continue to advocate a four-year course of medicine in the University of West Virginia. If this important work can be done at Morgantown, as the president said in his address, can't we have a four-year course in medicine at West Virginia University? Let us all get behind the movement.

DR. W. A. WALLACE (Martinsburg): Does Dr. Spray have any ideas as to the treatment of this condition? Is it specific or empiric?

DR. C. H. MAXWELL (Morgantown): I was wondering whether or not those vaccinated against typhoid and paratyphoid have gotten this disease.

DR. SPRAY (*closing the discussion*): Dr. Ray brought out a point that is of vital importance to me. Being a faculty member of the medical school, it may be inappropriate to discuss here our desires and aims. However, I would say that such studies as this are aside from our regularly assigned duties, and that they consume a considerable amount of extra time and effort. We get no money nor pleasure out of such work, but if anything we do is to the interest of the medical school or the medical profession of the state, our work will have earned its own reward.

Regarding Dr. Wallace's question on the treatment of the disease, I would say that there is at present no known specific treatment. It is entirely empiric and symptomatic, and in general follows the lines of treatment of the so-called paratyphoids, which may, in many instances, be really cases of undulant fever of the ambulatory type.

Dr. R. A. Craig, of the veterinary department

of Purdue University, recently stated to me: "What you want to do is to invent something to prevent contagious abortion in cattle and swine, and you will make a fortune." To the animal breeder this is one of the most important causes of annual economic loss, and there is nothing known at present which will check it except strictly applied testing, segregation, and sanitation. One man at Charleston, and the university farm at Wardensville, have applied these principles with success. At Pennsylvania State a badly contaminated herd was rebuilt into a clean herd within three years.

Regarding Dr. Maxwell's question on the effect of typhoid vaccination, there is, so far as I know, no existing knowledge on this point. The only information I have on the question is that pertaining to one of our cases, where the man was reported to have had typhoid some fifteen years ago and was vaccinated in the army against typhoid and paratyphoid, yet his blood showed agglutinins for *Brucella abortus* to a degree which we regard as suggestive of undulant fever, probably of fairly recent origin.

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12. Through the courtesy of W. T. Henshaw, State Health Commissioner of West Virginia, and Elizabeth I. Parsons, Director of Laboratories, to whom we here express our appreciation of their cooperation.

SOME ASPECTS OF STOMACH SURGERY *

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The diagnosis and treatment of peptic ulcer is so huge a subject that I shall only attempt to touch on the salient points, trying to illustrate these by cases from my own experience.

Included in the term *peptic ulcer* are both ulcers of the stomach and of the duodenum, which, although somewhat different in their symptoms and treatment, are nevertheless so closely akin both pathologically and clinically that they can not be considered apart. The etiology is so buried in obscurity, so hedged with theories, that it is almost impossible to weed out the true cause.

One of the oldest and most plausible theories is that of corrosion, which is that the ulcer follows a hyperacidity which corrodes the normal mucous membrane of the duodenum or pyloric end of the stomach. The ulcer, once formed, is kept from healing by the hyperacidity and induced spasm of the pylorus.

The proponents of the infectious theory, always insistent that foci of infection are the universal causes of disease, are so positive that infection is the cause of peptic ulcer that most ulcer patients come to the surgeon for treatment wearing a complete set of false teeth. However, there are certain indications that infection frequently plays a rôle in the causation of peptic ulcer. Many patients dying from infectious diseases, such as influenza and the various forms of septicemia, are found, at autopsy, to have ulcerations in the mucosa of the stomach and duodenum.

The strongest evidences of the infectious theory of gastric ulcer are found in the experiments of Rosenow, who, by introducing various strains of streptococci into the blood stream, was able to produce typical peptic ulcers in the unnjured gastric mucosa of experimental animals.

Virchow was of the opinion that the primary lesion necessary to the formation of a peptic ulcer was an arteriosclerosis of the gastric vessels, causing a local anemia and allowing the stomach mucosa to be digested. Once the ulcer has formed, a spasm at the pylorus is produced. This causes a hyperacidity, an increase of spasm, and thus delays the healing of the ulcer and favors its extension by the digestive action of the hyperactive gastric juice. The recognition of this cycle of hyperacidity and spasm is probably responsible for the cures under the Sippy treatment, which aims at putting the stomach at rest by a bland diet and counteracting the hyperacidity by the administration of alkaline powders.

The characteristic symptoms of gastric ulcer are pain, vomiting, and periodicity of attacks. Of these, the pain is the outstanding symptom, and is usually the cause of the patients seeking medical aid. Without pain there can be no diagnosis of ulcer. This pain is so variable in its severity, in its time of appearance, in its periodicity, that it is difficult to tabulate. It may vary from a mild pain in the nature of a heartburn to pain of such a severe nature that it may be mistaken for angina. The usual site of the pain is the epigastrium, in the midline or just to the

* Read before the Cabell County Medical Society.

right or left, and is also the site of usual tenderness and sometimes even slight rigidity.

A very characteristic symptom of pain of peptic ulcer is its appearance three or four hours after eating; that is, on an empty stomach. It is also characteristic that the pain is almost immediately relieved by the ingestion of food or of a dose of baking soda. This, particularly in duodenal ulcer, causes the patient to waken frequently at night with pain which is relieved by the ingestion of a cracker or a glass of milk. Probably the cause of this pain is the spasm of the pylorus induced by the hyperacid gastric juice secreted in an empty stomach and, undiluted, bathing the ulcer. This pain, in a few instances, is referred to the precordium, so that in some cases a false diagnosis of angina is made.

There are two areas of tenderness and rigidity—one exactly in the center of the epigastrum, which is most characteristic of gastric ulcer, and one just to the right of the center, which is more characteristic of duodenal ulcer. The tender area is usually definitely localized and is small in diameter.

CASE A.—Surgeon, previously in good health except for an attack of rheumatism in 1919, during which the tonsils were removed. In 1926 had acute nephritis following a grippe infection, with complicating antrum disease. This was followed about three months after the inception of the infection with severe pain in the precordium, accompanied by bradycardia. The pain was somewhat relieved by the administration of amyl nitrite and nitroglycerine. Cardiographic tracings were negative except for the bradycardia. Diagnosis, myocardial disease with angina pectoris. In spite of complete rest in bed the pain persisted. Finally, after a further lapse of two months, a gastrointestinal series of x-ray plates showed a typical duodenal ulcer. A fractional gastric analysis at this time demonstrated marked hyperacidity. The patient was put on a Sippy diet and the pain which had been present for three months disappeared entirely after 48 hours. There has been no recurrence except after unusual indiscretions in diet, particularly alcoholic.

In very many instances gastric ulcer is accompanied by sub-acute inflammations of the other intestinal viscera, particularly the appendix, and, to a lesser degree, the gallbladder. Some observers, particularly Deaver, are of the opinion that there is a primary appendicitis with a carrying of the infection through the lymph channels into the stomach. The frequent concurrence of inflammation of the appendix with peptic ulcer seems, in a way, to bear out this theory.

Complications.—Hemorrhage occurs in a definite proportion of peptic ulcers. This does not include the occurrence of occult blood, which, according to various authors, occurs in between 50% of cases as reported by Munyon and 100% as reported by Ewald. By hemorrhage is meant the occurrence of considerable bleeding, such as appears visible to the naked eye, sufficient to cause the secondary symptoms of anemia. According to Mayo's statistics, hemorrhage of this kind occurs in 70% of the gastric ulcers and 15% of the duodenal ulcers. Krohn placed such percentage at 23.7%.

The pathological cause of the bleeding is the erosion usually of a small artery in the wall of the ulcer. These hemorrhages are not fatal, as a rule, although the patient may be seriously depleted. There is a type of hemorrhage, however, which occurs as a rule from the erosion of a large vessel in the pancreatic base of a gastric ulcer, which may prove immediately fatal.

CASE B.—F. J. R., age 45, Williamson, W. Va. Admitted to the Jewish Hospital on October 22, 1928, with a long-continued history of indigestion. Has been vomiting blood since October 8th. The patient was admitted in the condition of shock. Blood-pressure 90/60, pulse 120, temperature 97.6. Blood count: Red cells, 3,000,000; hemoglobin, 55%; white blood cells, 17,000; polynuclears, 85.5; lymphocytes, 13%; large monocytes, 1.5%; eosophiniles, 0.5%; transitionals, 0.5%. After transfusion, condition was improved; the blood-pressure came up to 120/90, pulse went down to 90. An operation was planned for October 24th, when suddenly, without warning, on the morning of the 24th, the patient died. Autopsy revealed the stomach filled with an enormous clot of blood. The duodenum was indurated. Just within the first portion there was an eroded area about 4 cubic centimeters in diameter, with a thickened base. At the base of this ulcer there was an eroded vessel, a large branch of the pancreatico-duodenal, about 2 millimeters in diameter, plugged by a recent clot.

It is self-evident that in this case, without operation, death from recurrent hemorrhage was unavoidable; and had not this man had the misfortune to die before the operation as planned, his life would probably have been saved.

CASE C.—A. B., age 55. Admitted to the Jewish Hospital on September 19, 1928, with a history of having had indigestion for the past five

years, with a severe hematemesis three years ago, which yielded to treatment. Suddenly, today, the patient became acutely ill, fainted, and was brought into the hospital, where he vomited large quantities of blood. Pulse 140, blood-pressure 90/40; severe pallor. Red blood cells, 2,500,000; hemoglobin, dark, 30%; white count, 18,000. An immediate transfusion of 500 c.c. of blood was given. The patient improved, but three days later copious quantities of blood was found in the stool and the red blood count and hemoglobin further declined. Another 500 c.c. of blood was given. This was repeated the third time about a week later, after which only small amounts of blood appeared in the stool at irregular intervals. The patient was built up by very careful feeding until the first of November. The red blood count was 3,500,000, hemoglobin 60%, white blood cell count 12,000, blood-pressure 120/80. At that time x-ray examination was made and revealed a large ulcer at the lesser curvature. An operation was done on November 5, 1928, under nerve-block anesthesia; midline incision was made, stomach was delivered and found normal in size. On the lesser curvature, adherent to the pancreas, there was a large indurated ulcer the size of a dollar. It was impossible to deliver the stomach for a resection, therefore the anterior wall of the stomach was opened and, through the exposed stomach, the ulcer on the posterior wall was destroyed by cautery. The stomach was closed and the abdomen closed without drainage. The patient made an uneventful recovery and has remained free from hemorrhage.

These two cases are sufficient to demonstrate that certain cases must be operated on to prevent a fatal outcome from hemorrhage. In most cases the treatment is definitely medical. The patient should be put to bed at absolute rest, and nothing should be given by mouth for several days. The principal therapeutic agent is morphia, which must be given in sufficient doses to keep the patient quiet. The subsequent remedy is transfusion of whole blood, which must be given in sufficient quantities to build up the depleted circulation and to restore the blood-pressure and the hemoglobin index to safe limits. The various coagulents may be used, but, having tried them all, I have no confidence in their efficacy. The blood transfusion alone increases the coagulability of the blood, and so tends to stop the bleeding. After the hemorrhage is once stopped, the patient must be built up by the most careful feeding. Usually, milk, and milk only, is given for several days, or even weeks. It is necessary in some instances to make a differential diagnosis between the bleeding from an ulcer and the bleeding from an esophageal varix, the bleeding of the blood dyscrasias and the bleeding which occasionally occurs as a concomitant symptom of a general disease. The prognosis is good, as under this treatment there is a very small mortality—one to two per cent. Surgical interference is, as a rule, contraindicated, as there is great difficulty, without proper x-ray localization, in finding the bleeding point.

In case of recurrent hemorrhage the story is quite a different one, and here the only chance for saving the patient is operation. If possible, an x-ray study should be made and the site of the ulcer definitely located. At operation it is necessary to find and destroy the bleeding ulcer, either by excision or cauterization, as the performance of a gastroenterostomy in no way lessens the tendency of the ulcer to bleed. The exponents of subtotal gastric resection for ulcer believe that here, too, later resection of the ulcer-bearing area is indicated. This I shall discuss later.

The following case will show the futility of operating for gastric hemorrhage unless the source of the hemorrhage is discovered.

Mrs. H., age 52. Has had several attacks of gastric hemorrhage. The present attack began a week ago, with daily recurrence of the hemorrhage. She was too ill to have an x-ray taken. She was brought to the hospital almost exsanguinated. Two blood transfusions were given on two consecutive days. On the fourth day the patient seemed in good enough condition to warrant operation. Midline incision was made and a search for the bleeding point carried on. In spite of the most meticulous search no definite point of bleeding could be discovered, although both the stomach and duodenum were opened and found filled with blood. The patient died three days following operation. At autopsy the stomach and intestines were found filled with blood and blood clots, but the source of the hemorrhage could not be discovered. Probably, in this case, were operation to be undertaken today and the source of the hemorrhage not found, the only possible procedure would be a subtotal gastrectomy.

Hemorrhage from Appendix.—Occasionally, gastric hemorrhage is due to intraäbdominal lesions other than ulcer. It occasionally complicates cases of subacute appendicitis. This was first brought out by Munyon and has been witnessed by many observers. I have had several cases of this kind. The

diagnosis is difficult to establish and can only be proved by operation with negative findings and by a subsequent course free from gastric symptoms or recurrence of ulcer. In some of these cases there is also a marked pyloric spasm.

CASE D.—Male, age 36, suffered from severe hemorrhage from the stomach a month before I saw him. Prior to that time he suffered from vague abdominal symptoms. Examination showed a man in evident good health. X-ray examination, October 31, 1922, showed rapid emptying of stomach; duodenal cap does not fill out. Examination repeated November 3; stomach normal in size and position; no evidence of filling defect—however, the duodenal cap fails to fill out. Subsequent x-ray examination November 6 reveals stomach normal in size and position; no evidence of filling defect. Again the duodenal cap failed to fill out perfectly, and under the fluoroscope there was a defect suggestive of a duodenal ulcer of the upper outer portion. There was, however, a marked tenderness and rigidity over the appendix region. The gastric analysis showed normal acidity. In spite of the history, a diagnosis was made of chronic appendicitis with the appendix adherent in the upper abdomen.

Operation was made on November 16, 1922; gas ether anesthesia. A right rectus incision was made in the upper abdomen; the stomach was delivered into the wound, carefully examined, and found to be normal. Duodenum was also carefully examined and found to contain no abnormalities. Appendix was explored and found to be adherent to the pelvis, the adhesions running from the base of the appendix downward into the pelvis. The tip of the appendix deflected along the posterior border of the cecum, and adherent to the upper abdomen, the tip lying within one-half inch of the duodenum. Appendix was dissected free from its surrounding adhesions, clamped, ligated, amputated, and the wound carbolized and inverted with purse-string suture. This man has remained in good health up to the present time.

The complication of stomach ulcer which requires immediate surgery is, of course, perforation. The symptoms of perforation are so characteristic as to warrant making an absolute diagnosis. Many of these patients give a history of previous gastric disturbance. Of the 37 cases from the records of the Cincinnati General Hospital, collected by Johnston, 78% gave a history of this nature. This is higher than the usual findings in other collections, as in a large proportion of cases the symptoms of perforation are the first indication of gastric disorder.

The attack, as a rule, follows ingestion of food, and is ushered in by pain of fearful intensity, collapse, and all of the symptoms of shock, including sub-normal temperature, sweating, and tenuous rapid pulse. Vomiting occurs in only a small proportion of cases, being present in only 37% of Johnston's cases. This is easily understood, as the stomach is emptied of its contents through the perforation. Abdominal rigidity, which is one of the most characteristic signs, begins almost immediately and deepens in intensity. It is of a peculiar ligneous hardness, present over the entire abdomen, but is most marked in the epigastric region. This characteristic rigidity is seldom absent. This triad of symptoms—excruciating pain, boardlike rigidity, and collapse—are sufficiently characteristic to warran diagnosis and immediate operation, since delay spells disaster.

These symptoms may be shared by rupture of the gallbladder, acute pancreatitis, and basal rupture of the appendix, all of which alike demand immediate operation.

X-ray examination without the ingestion of barium may lead to a diagnosis by the appearance of air under the diaphragm, as has been seen in two personal cases.

The question frequently arises as to how these cases should be treated surgically. Deaver is of the opinion that, in addition to the suture of the ulcer, a gastroenterostomy should also be done. It is my policy to repair the ulcer, covering it with a strip of omentum, and only doing a gastroenterostomy if the pyloric lumen is so narrow as to delay emptying of the stomach. Finsterer and the other advocates of the subtotal resection for ulcer believe that, in perforating ulcer, if it is operated before there is a complicating peritonitis, resection should be done. In this, of course, I do not agree.

The question of drainage is of importance. Here the difference between peritoneal contamination and peritoneal infection must be recognized. In early cases, where there is no purulent inflammation of the peritoneal cavity, but merely a soiling from gastric secretions, the peritoneum should be closed without drainage. In case there is definite purulent inflammation, cigarette drains should be introduced close to, but not in contact with, the sutured ulcer.

The question now arises as to the treatment of peptic ulcers other than those accompanied by hemorrhage or perforation. In the absence of obstruc-

tion, peptic ulcer should be treated medically until all hope of medical cure has been exhausted. This means that if a patient is fairly conscientious in adhering to his diet and remains unrelieved for a year, or if with a slightly increased diet the symptoms recur with each increase of the diet, then this patient should be operated upon.

A sharp distinction should be made between duodenal ulcers and gastric ulcers. Whereas I am not entirely in accord with the views of McCarthy in the frequency with which gastric ulcers are followed by malignancy, I nevertheless think it is sufficiently frequent to warrant the surgical interference in all cases of ulcer of the stomach, and particularly those situated on the lesser curvature.

Cases in which there is a gross deformity of the duodenum or stomach, or those cases in which there is pyloric obstruction, are unquestionably cases which should be referred for surgical treatment.

Anesthesia.—Before discussing operations on the stomach, it will not be amiss to discuss the question of anesthesia. As is well known, one of the most potent enemies of success in gastric surgery is postoperative pneumonia, the instance of which is undoubtedly increased by the use of general anesthesia. These operations can be done under local anesthesia with perfect satisfaction. I practice two methods: one, nerve block, and the other, spinal anesthesia, with the use of neocaine. Both of these methods are satisfactory, and each has its advantages. The spinal anesthesia must not be given in cases where the blood-pressure is below 120 to 130, as spinal anesthesia is always accompanied by a drop in blood-pressure, which, in case the blood-pressure is low to begin with, may prove fatal.

The spinal anesthesia, when effective, is free from pain but of short duration, so that the last part of the operation must frequently be done under inhalation narcosis. The nerve block, which is not so complete an anesthetic, is of longer duration and may be renewed as desired or the suture of the abdominal wall completed with additional novocaine infiltration. Its greatest advantage is its complete freedom from danger. In nearly all cases I am able to use either the spinal or block anesthesia to complete these stomach operations, whether they are resections or the more limited type of operation.

The question which is uppermost in the surgeon's mind at the present day is the method of surgical procedure in gastric ulcer. With the advocacy of the subtotal gastrectomy for all cases of ulcer by Finsterer, the method has not gained in popularity in America except in the hands of a few, particularly Berg and Strauss. They claim that the only way to cure ulcer and to prevent its recurrence is to remove the acid-bearing area—that is, the pylorus and antrum. This operation is not gaining much in popularity, as it is unquestionably a mutilating operation—one accompanied by a larger operative mortality than the more simple operations.

It is now clearly evident that partial gastrectomy for peptic ulcer, particularly duodenal ulcer, does not necessarily insure good results; nor does it necessarily protect the patient against subsequent ulceration. Many reports of recurring ulcerations from partial gastrectomies have appeared, one of the most comprehensive being that of Bergfeld, who collected 53 cases from reviewing the literature. The report is based on cases which have been seen in the Mayo Clinic. These figures are certainly additional evidence that the removal of a large part of the normal stomach for the relief of a duodenal ulcer seems not only unnecessary but unwarranted, since the same complication — that is, gastrojejunal ulcer — may occur, following subtotal gastrectomy, as follows the less radical method of treatment.

My practice in the treating of gastric or duodenal ulcer depends entirely on the case found. In the small ulcer occurring on the lesser curvature, a resection of the ulcer is done, either with a knife or cautery, and the defect in the stomach repaired with sutures. After this a gastroenterostomy is done, if the stomach is so deformed as to delay emptying time. In the duodenal ulcer, if possible, the ulcerated area is resected by resecting the anterior wall of the duodenum and suturing it according to the plastic method of Balfour. In order to do this the duodenum must be thoroughly mobilized. In some instances, where there has been a marked hyperacidity, an added gastroenterostomy is made in order to reduce the acidity of the stomach.

In case the ulcer is on the posterior wall of the duodenum, it is destroyed with a cautery after exposing it through an incision on the anterior duodenal wall. For the obstructing ulcers, either of the pylorus or duodenum, where the ulcer seems to have run its course and resulted in scar tissue with a contraction of the pylorus, gastroenterostomy alone seems to be the ideal operation and is accompanied by excellent results. It is self-evident that, in case a large ulcer occurs on the lesser curvature or on the pyloric side of the ring, a frozen section diagnosis must be done so as to determine whether or not resection should be done. I make it a practice not

to do a subtotal resection except in those cases which, from their size, are suspicious of carcinoma.

There are a few technical points which are worthy of note.:

1. Clamps should not be used on portions of the gastrointestinal tract which are further used for suturing.

2. Contrary to some observers, I use two layers of suture—the first layer double-0 chromic gut, the second layer black silk. The latter gives me a great amount of confidence, and I have never seen any bad results follow it.

3. Lesions of the lesser curvature, which seem almost impossible to eradicate when the stomach is first exposed, can be completely mobilized by gradual division between ligatures of the gastro-hepatic and the gastro-duodenal omentum so that the entire operation can be done outside the peritoneal cavity.

As a complication of gastroenterostomy, the most devastating is the gastro-jejunal ulcer, which, as I said above, occurs even in those cases in which a resection has been done. There seems, in these cases, to be no hope of medical relief, and the only possible relief is a reoperation, with the resection of the ulcer and the formation of some sort of a new anastomosis. A remote complication of gastro-jejunal ulcer is the gastrocolic-jejunal fistula which occurs as a result of the most severe type of gastro-jejunal ulceration. Here the colon becomes adherent to the secondary ulcer with resulting fistulous formation.

CASE E.—Mrs. Z. Patient is an elderly woman, complaining of tenderness in the abdomen. She has been sick for several years and has been operated on twice. Five years ago a gastroenterostomy was done. She was well for a few years, and about two years ago she began to lose weight. She now complains that her bowels move shortly after eating food. She does not vomit, but complains of severe peritoneal cramps. When she drinks water she has an immediate liquid stool. X-ray examination shows gastric-colic fistula.

Operation with nerve-block anesthesia; incision to the left of the midline. After separating the adhesions, the stomach, duodenum and transverse colon were delivered. The duodenum was found occupied by an indurated mass, evidently the site of an old ulcer. On exposing the anastomosis it was found that there was an opening between the stomach, the jejunum, and the transverse colon. This union was separated, the colon sutured and dropped back. The jejunum and stomach each were sutured separately. After inspecting the duodenum, it was thought that the pyloric portion was not sufficient to allow the passage of food; therefore the duodenum was widened according to the pyloroplastic method of Balfour. Recovery was uneventful.

CASE F.—Miss D., age 28. Operated upon three years ago for an ulcer of the stomach, at which time a gastroenterostomy was made. Was well for about a year, after which she suffered continuously from pain, nausea, and vomiting. X-ray examination showed probable gastro-jejunal ulcer. February 1, 1927, ethylene anesthesia, exposure made through a right rectus incision. After separating adhesions the gastroenterostomy was delivered, the jejunum was carefully separated from the stomach, revealing a large ulcer, which necessitated a resection of the loop of jejunum and an end-to-end anastomosis. The stomach was sutured and the pyloric opening, which was occupied by a duodenal ulcer, treated by the Balfour gastroduodenostomy. Since that time patient has been well.

The post-operative treatment of stomach cases is simple. The patient should not be fed for 48 hours, during which time 4,000 c.c. saline solution should be given subcutaneously each 24 hours. At the occurrence of any untoward symptoms a gastric lavage with a small tube should be undertaken. At the end of 48 hours feeding should be begun in small quantities, using half lime-water and half milk. Morphia should be given in sufficient quantities to allay the pain and allow complete relaxation. I believe, in a way, that this prevents pneumonia, as, following stomach operations, the diaphragm is likely to be splinted because of the pain incurred in its movement. If morphia is given in sufficient quantities to allow the free excursion of the diaphragm, the aëration of the posterior air spaces is assured and thus the tendency to pneumonia is lessened. In case the patient is in shock, blood transfusion should be given after operation.

It will be interesting to show a few slides of gastric lesions. In some cases, where the lesion is small, it is necessary to show it on repeated x-ray plates in order for the diagnosis to be certain. It is also interesting to observe that, in some cases, where the lesion can not be shown by the anterioposterior view, it may be easily seen on lateral views. These plates are taken by Dr. Samuel Brown, in the x-ray laboratory of the Jewish Hospital.

I have intentionally not discussed carcinoma of the stomach, as it is a self-evident fact that the only hope of cure is operation at the earliest possible time. It is surprising how the percentage of operability of

carcinoma of the stomach is increasing, with a wider understanding of the methods of mobilization of stomach tumors.

Surgery of the stomach is not a simple form of surgery, as each case must be considered on its own merits, and general rules can not be laid down. It is only with the study of the individual case and meticulous attention to detail that good results can be obtained.

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ACETYL-SALICYLIC ACID IN THE TREATMENT OF RINGWORM *

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There are perhaps few places over the body where local disability will bring forth louder and longer wailing than the moaning over a painful foot. And pain, at times, can be borne better than intense itching.

With the history of very severe itching, especially when shoes are taken off at night, and the toes are rubbed raw on the bedclothing, or the history of a small, itching blister which perhaps was broken while scratching, or of raw patches between the toes, the diagnosis is half made already, at least suspicious of ringworm.

Some very interesting facts have been published recently in the *Journal of the American Medical Association* by Drs. Robert Legge, Lee Bonar, and H. J. Templeton,[1] about ringworm infection among university students. Their own work at the University of California in examining 3,105 freshmen showed an infection of the so-called ringworm type in 52½% of the men and 15 1/3% of the women. Similar studies by others vary from 61% to 85% in student bodies over the country, which but goes to show that it is a widespread infection even among the careful and cleanly classes.

Dr. Legge states: "One of the biggest problems in public health work that is at the present time interesting college physicians, physical directors, military and industrial organizations, athletic clubs and bathing resorts is epidermomycosis. The term was used by Weidman of Philadelphia to obviate the various names given to myotic infections of the skin commonly known as ringworm."

Etiology.—Cleveland[2] gives a very interesting discussion of the history of the study and the present-day means of laboratory diagnosis. It has been determined that a fungus, one of the species of the genus epidermophyton, and trichophyton interdigitale are among the more important causative organisms.

Clinical Appearance.—In the latent stage it is seen most often between the toes, where there is found a line of epithelium, water-soaked in appearance and heaped up; while more acute, raw, shiny areas will be seen with definitely marked edges, often associated with vesicles nearby. These vesicles are often referred to as having an appearance resembling boiled sago. The intense itching causes scratching which often ruptures these vesicles.

Stevenson[3] classifies the various types and describes them in detail as follows: vesicular, scaling, macerated, fissured, callous, keratotic; the first three of these being the most frequent. MacLeod[4] further speaks of a suppurative type.

Treatment.—Cannon[5] stresses cleanliness, which, of course, is important; but it seems rather paradoxical when we think that ringworm is contracted about shower baths and those who are bothered most are the athletic type who bathe most frequently.

There are a number of preparations listed which have given results—reports varying as to their value. Whitfield's ointment should be mentioned first. The returned questionnaires received from university physicians by Dr. Legge seem to consider Whitfield's ointment (salicylic acid 3% and benzoic acid 5%) a panacea for this infection, but Dr. Legge concludes: "In our experience it is far from that, being particularly contraindicated in the acute vesicular and raw varieties."

Among the other preparations which are frequently listed are: liquid iocamphen; tincture of iodine 3%; chrysarobin and chloroform in tincture benzoin compound; tincture iodine with 10% acetic acid; gentian violet.[6]

Throughout the discussions of the treatment a constant warning is heard not to cause irritation of the skin by too strong medication. This is especially noted concerning the use of salicylic acid. On the other hand, a higher percentage of this drug is found to be more efficacious than the usual 3% found in Whitfield's ointment.

Being, then, between the necessity of raising the salicylic acid content and the warning against irritation, together with the suggestion that acetic acid is at times found helpful, the writer tried acetyl-salicylic acid with excellent results. A complete search of the literature (by W. F. Prior Company) failed to show any report of the use of this particular preparation in the treatment of ringworm.

* Original paper.

Acetyl-salicylic acid can be used as a powder, or in ointment base, three drams, or even stronger, to the ounce of lanolin.

The advantages of acetyl-salicylic acid are:

1. Rapid antipruritic effect.
2. Non-irritating.
3. Effective as a dusting powder.
4. Response usually prompt.

After a careful bathing and drying of the infected area, acetyl-salicylic acid ointment (or in the simple powder form) is very grateful to the itching, burning part, and the desire to "dig into the skin" is relieved by the antipruritic effect. There seems to be an analgesic effect also. (In another case, acetyl-salicylic acid powder gave relief in a large raw area resulting from skin gangrene, when other local applications had little or no effect.) Not only is it non-irritating but actually soothing.

In moderate cases of ringworm infection, response was noted in about two days, with one or two applications a day. More severe cases require somewhat longer time. It is advisable to continue applications for a short time after apparent cure has been obtained.

Prophylaxis.—Recurrence of the infection is frequent, due to the fact that the fungi are harbored in socks, shoes, gloves, clothes, etc. Boilable clothes should be so treated. Destruction of the garment is often advisable. It has been suggested that shoes be swabbed out with creosol solution. A dusting powder of acetyl-salicylic acid is much easier, does not cause irritation, and has been found to be very effective in the cases under observation.

O'Conner[7] says that natural body oils form a layer of defense against the invading organism, and has suggested the use of cold cream, lanolin, etc., locally to susceptible areas to replace the loss by frequent bathing.

Complications.—Pyogenic infection is an important sequel. Scratching breaks the epidermis, which but invites secondary bacterial invasion, and, due to the warmth and moisture, the conditions for culture media are ideal.

White[8] reported a very interesting case of lymphadenitis associated with superficial fungus dermatitis of the feet, where direct glandular involvement was seen without secondary bacterial invasion. The organism was cultured from the inguinal gland.

The treatment of these complications is absolute rest in bed, with continuous hot, wet dressings locally. Acetyl-salicylic acid should be used locally also, as in uncomplicated cases.

A report is being made at this time of the use of acetyl-salicylic acid in the treatment of ringworm in the hope that, with the widespread interest in the infection, as shown by the report of Dr. Legge's article, this preparation may be given a wider clinical trial and report than the writer is able to give.

Conclusions.—1. Acetyl-salicylic acid, three drams (or stronger) to the ounce of base, has proven very effective in the treatment of ringworm infection.

2. The advantages are:

1. Rapid antipruritic effect.
2. Non-irritating.
3. Rapid response.

3. Powdered acetyl-salicylic acid is an effective dusting powder for prophylaxis.

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THE IMPORTANCE OF THE COUNTY SOCIETY SECRETARY *

By HARRY M. HALL, M.D., F.A.C.P.
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The question has arisen from time to time as to which is the most important officer in a medical society—its secretary or its president? This, of course, is going on the theory that both offices are being filled by equally capable men working at the maximum of their opportunities. The question will probably never be adequately answered any more than will "What is the greatest American novel?" or "Who was the most notable man ever to have served his country?"

We shall attempt, however, to go into the matter of secretarial duties nevertheless, and in doing so will approach the subject without any attempt at

* Read before the Annual Conference of County Secretaries at Charleston, W. Va., on December 30, 1929.

extolling the office just because we happen to be addressing secretaries, or of flattering merely because it might serve to enliven the occasion.

Any medical aggregation must have a president and a secretary. The duties required of each office are manifestly different and can not be to any great extent made interchangeable. It is conceivable that a society might be operated with only a president, who would also act as secretary, or a secretary who would also be president; but it would not be an ideal arrangement and could never make for a good society. Furthermore, one might actually say that if one of the two offices had to be given up it is barely possible a presidency dropped would be of less inconvenience than the abolishment of a secretaryship. However, it is quite necessary to have both. A president performing as the requirements demand must assume the responsibility of operation, preside at the meetings and be ready to make decisions and shape the policy day in and day out during his régime of office. It is not uncommon to find some man dodging all these, but it is not usual and certainly not following the line of duty and reason for his elevation to office.

Much of what the president is called upon to decide reaches him by way of his secretary, and it is a very usual experience to find the president quite dependent upon him for what is furnished for the executive to examine. For this reason we have often heard many presidents quite frankly state that whatever success they enjoyed during their incumbency was due to the splendid support they received from their secretaries.

Unless a president would make a daily trip to see his secretary, or at least call him up by telephone, he can not really know what is going on, except that he has a faithful secretary who reports to him constantly the actualities as they present themselves. We can see, then, that a secretary might easily make or break a president. We might go a bit further and be entirely truthful by saying a secretary might easily make or break a society. In actual practice, we know he can. Human nature being what it is, and a president merely a human being, as are we all, unless he is possessed of some extraordinary ability and flair for nosing in and about things he is going to sit back comfortably and await the advent of what his secretary offers him, and in the every-day course of things we know this is what really takes place. So, outside of presiding at meetings, it will nearly always be noted that a president looks to his secretary as to what next to do. This makes for a situation that most societies are a little careless in taking into consideration, and to visualize it we will quote from an old and somewhat overworked verse of poetry:

> "Full many a gem of purest ray serene
> The dark, unfathomed caves of ocean bear:
> Full many a flower was born to blush unseen
> And waste its sweetness on the desert air."

The secretary only too often occupied the dubious position of both gem and flowerlet in the above quotation. At the end of the term much is made of the president—even if he has not been particularly outstanding—and the course of events are added to his scroll of achievements. The secretary is only too often forgotten. Now and then some member more gifted than the rest arises and wishes to have the floor to offer a resolution of thanks to the hard-working secretary. The members are somewhat embarrassed at their lack of thoughtfulness, and tardily and often hurriedly, ere they grab their hats and coats, vote unanimously whatever he happened to offer in his motion. It is a heedless gesture, and yet that is often all a secretary ever gets for a long year's work of actually keeping the society in order and in function.

Here and there a society gives a salary to its secretary. For the most part the size of this stipend is just large enough to look like a fair-sized tip to a head-waiter in a big night club, and is considered by the recipient as just big enough to make its acceptance something of an insult. It is, therefore, often returned. It is quite clear what all this will eventually lead up to. A rejection of the honor by the very men who ought to take it. It is quite true that there are always men with enough sense of the fitness of things who will directly offer themselves as a sacrifice, but whether for the best or not we do not know. The world is getting to regard the idea with favor that the laborer is worthy of his hire, and if a man offers himself too often or too much he is viewed as being an easy mark. No one cares to be viewed as accepting something full of hard, difficult work, and then be regarded as somewhat foolish. The average member of a medical association should pause now and then and come to view the secretaryship of his society in its proper light—as equal in importance, although after a different manner, with that of the presidency. More and more are the secretaries having their work increased. Added detail. Accumulated business. Mounting programs. As many of the men in most societies who are booked to give the addresses come from the out-

side, the itineraries of their journeys fall to the secretary. He must follow legislative matters. Give himself up to keeping tab on the personnel of his following and know pretty much all the characteristics of the members. He must see that the committees function properly, and, in large societies, follow the activities of the board of censors, which, in many ways, is of the greatest importance. Therefore, in time to come one of two things must happen. Either the secretary must receive a satisfactory emolument in money, medals, gifts or honor which shall give substantial proof he is properly appreciated by his society, or else the office some day will be neglected and filled by indifferent men.

Now, one of the ways to properly show how much you mean to the vital conduct of this whole state association is to have you gather yourselves together on an occasion like this and, by listening to what you have to say as to the conduct of your societies, learn directly from your very experiences in what condition the medical profession happens actually to be in today. You know because it is you, and you alone, who have your fingers daily on the pulses of the societies. It is the societies individually that make the medical association.

> All are but parts of one stupendous whole
> Whose body Nature is and God the soul."

might be paraphrased to a medical society,

> All are but parts with the State the whole
> Whose body the Secretaries are and our Art the soul."

The state association meets but once a year, and then, with perhaps too much hurry and confusion, transacts its business. The day will come when more time will be spent at state gatherings on the business and economic future of our profession and less to a lot of reduplicated scientific endeavors, because we now go all over the country to get our scientific ideas and few men there are who have not been to several conventions. Throughout the year, you well know, we have leading men from everywhere on our county programs. So, in the main, there is not so much call for the scientific side of medicine at our state meetings. But there is only one place where you can thresh out the many matters of primary importance that, you well know, too, beset you throughout the year—that is at the state meeting. That particularly and peculiarly belongs to us—and us alone. We can't go to Detroit or Miami or Chicago or Boston or Portland to learn the peculiar problems of Mount Hope or Clarksburg or Martinsburg or Chester. We must go to the state meetings. By a wise provision you are all delegates to the state meetings, and on you, more than on any other delegates, rests a great responsibility. The other delegates are picked out at random and often are not acquainted with all the details of perplexity of even their own societies, much less those of the state. But you men know whereof you speak, and what you say is entitled to the greatest respect possible simply because you know the inherent weaknesses and strength of the individual units. We can think of no more fortunate happening for an incoming president than to have the benefit of your candid recital of what besets you. All that is required being that you have the courage to paint things as they actually exist, and, if there be sores and festerings, expose the wounds and either state your ideas of relief or seek the councils of others as to their cure. Nothing can be gained either here or anywhere else in exalting your fields of action to the skies, since it is highly probable that no medical society exists anywhere in the United States without its quota of existing perplexities. Many not alike, but there all the same and causing president and secretary some concern. And, on the other hand, if you have a good, substantial society with an ever-increasing membership, vigorous conduct, vital interest, and one that is doing its utmost to place medicine at the top of human endeavor, where it rightfully belongs, it is your duty with becoming speech to advertise to your contemporaries just what measures you deem the essential motivating factors that have placed you where you are.

Some of the very best medical meetings we have ever been privileged to attend are those of the editors and scretaries of the component medical associations of the various states that go to make up the American Medical Association. They are short, taking up two mornings and an afternoon. The papers are limited—probably not running over six to eight. While the addresses are designed to be outspoken and free from any limitations, they are not the features that give the meetings their individuality. It is the candor and frankness which marks the discussion. Here, indeed, things are designated as spades if they happen to be spades. We sincerely hope this gathering of secretaries will develop into an identical organization. It is customary there to pick out a chairman at each meeting from their own number, and it may be said in passing that his rulings are as difficult as any we know of if he does his duty. He must check unreasonably long discussion, and this practically keeps him busy. So he must be a man

with some authority, and generally is. We all know the Interstate Post-Graduate medical gathering owes its great success to having a limited time to do things and sticking to it, and so it is essential that any deliberative body do the same.

What, then, are some of the things which this body might, either now or in the future, find it convenient to consider? As has been said before in answering this question, it is very evident that there is scarcely any one more competent than you, yourselves, are to find your own topics for discussion, and we are in no sense trying to gratuitously offer any departure from that belief. The responsibility might be said to rest upon a retiring president to report to you some of the matters that have passed his notice during his incumbency, and we will recite several, merely in a sense as filling our obligation and not as supplying you in any way with material on which you should act. We say this from a deep sense of conviction that this gathering should not look to any source but themselves for material upon which to function. Our idea of this meeting of secretaries is that it should be unusually free and independent, and that when you are in session you should hold it as a matter of pride and high ideals to do your work with outstanding clarity, earnestness, completeness, and dispatch. No small details or petty squabbles should clog the few hours you have to work in, and that whenever you meet it will be a matter of general rumor and report that you get more done and accomplish more important results than any gathering in the state. Because we believe you can if you are so minded. Year after year, then, it will be a matter of interest to await what you have to say and what you do before general action is taken. In other words, it is entirely up to your organization to make itself one of the most important and reliable barometers of the medical atmosphere in the state. We pray you will always be independent, fearless, and, about all things, just and courageous.

Among other things we have noticed elsewhere, there is a bulletin or periodical for each county society. Once upon a time the Ohio County Medical Society actually got as far as considering this, and some of the actual copy was assembled; but it lacked the vitality to go through. We recently received a bulletin of the state meeting of Pennsylvania secretaries at Harrisburg, and we noticed every county society has its local periodical. We believe this a very excellent idea, and perhaps the greatest help a secretary could have in showing what is actually going on in his society. He need not assemble it himself, but have an editor to do it for him and submit the final copy to him and the president. It would stimulate local interest to a great extent, and could be published as the finances of the society it represented would warrant.

The matter of politics is something that almost none of us would care to consider were it not that we are practically left with no choice about it. In the discussions recently held in Chicago we were glad to learn that the representative from California stated that out there they also had come to the conclusion that the old, dignified method of supplying information and scientific lore were futile, and that a strict handling of matters in a thoroughly straight political manner was all that did any good.

We are quite aware that a great many fastidiously minded physicians regard with something akin to horror the entrance of medicine into politics. We must admit a very serious repugnance, ourselves; but, on the other hand, have they a plan to avoid it? We think not. It is very plain, from the recent investigation of legislation, that every enterprise and profession had its lobbyist. Any one going down to try to obstruct or pass a bill is, strictly speaking, a lobbyist. We believe it is much better, and far more elevating and civilized, to send our own representatives directly into the legislative bodies where they can legitimately present the merits of our case, with no ulterior motives to be ascribed. For some reason altogether beyond explanation to us, medicine is invariably picked out for some kind of a legislative assault.

Those medical men who are so squeamish about the ignoble sight of medicine entering politics should remember that, at the last meeting of the legislature, had it not been for some very thorough activity on the part of a few medical men, the whole scheme of preventive medicine would have suffered a very serious setback simply because any citizen who claimed allegiance to any religious cult could have been immune to the laws governing disease prevention. So that, whether we will or not, we are practically forced into consideration of politics as very much a factor in our progress. It is up to you gentlemen to help find ways and means to increase our representation in the legislature that will actually work out.

You are continually beset by what constitutes a good member in your societies. It seems to us that, until the higher bodies have more definite ideas about this, you can scarcely consider it a part of your duties

to define the requirements. But there are local questions arising all the time which develop situations that can give you some serious trouble. You can not, of course, decide them, since there are other bodies for that purpose; but the day may come when the average medical society will deem it a privilege to hear an annual message from its secretary, in which he can point out the good and bad perspectives in his outlook. Every president and secretary should meet regularly at a designated place and discuss their several societies together. This should be done under the modern American habit of taking dinner or luncheon together. They should both be frequently dispatched to meetings of other societies and the cost gladly borne by their own societies.

The day is coming when it is going to take considerable money to properly run a medical society. The Californians again have the right idea. They operate with paid lawyers, have a visualization of occupying their own building, and in every way regard their associations in the light of a serious undertaking. Most of us take a medical society as a very casual part of our lives. It is a big mistake, and a little glance sidewise will show about every other activity in life very well correlated and functioning with an unusual solidarity and compactness. Medical societies, we think, are going to pass through a rapid metamorphosis in the next five years, and in the end they will either be one of the strongest aggregations of determined men ever gathered together in a single human endeavor or they will be nothing but a name. We will all have to see that this is what civilization is leading us to, ourselves, or outside forces quite beyond our control are going to make us realize it. From a number of sources the individual integrity of a medical society is going to have its structure tested.

There are a score of factors, all different, which, in their own ways, have a stronger call on some medical men than the attendance of a medical society. By *stronger* we mean a more selfish reason or one calculated to advance the material interests of a doctor at a more rapid pace. And, since it is a natural instinct to progress with as much celerity as possible, it will be found, sooner or later, that the pressure is more than some men can stand. So we find a multitude of other interests demanding the time of the doctor on the same night he is called upon to attend his local society. Many complain that too many other engagements—some of which are of a medical nature—demand constant appearance. The unit of our very existence is the county medical society, of which you are so important an officer. This may come and that may go, but since we have had our existence the county medical society is the basic consideration on which all else is built. If it goes out of existence or is weakened in its force and appeal by anything else whatever, then, sooner or later, goes the state association and ultimately the American Medical Association. Just now we are all playing with fire by dividing our allegiance with a great number of other associations and outside agencies. Not one of them would stand any show of existence if there were no good county societies, no good state associations, and a weakened American Medical Association. The hope of the future as to county medical societies reposes quite a little in your hands. Between you and the presidents rests the outcome. We said, in the beginning, that the president often relies upon you to advise him as to what is going on. It is very often up to you to advise courageous action, and it behooves your president to heed it.

The job of secretary is not for a weakling. It should be refused by a man to whom it is handed if he feels he is not made for some sacrifice and the inherent realization that he will never get credit for all he performs. To the selfish man who occupies a position for only what he can get out of it, we would advise against assuming the secretaryship. If there is no joy in the work for itself alone, then a man is miscast who assumes the rôle. But show us a good medical association of any kind, and particularly a county one, and with our eyes and ears closed we will wager heavily on the fact that behind a lot of its success is a good secretary. It might have a weak president, but it simply can not have a poor secretary. We would be willing to say this to a gathering of presidents. But this is also true: a good secretary has often been the means of making a poor president into a good one; and by the same token, the vitality of a good president has often started an indifferent secretary on the way to better things. So, like the cardio-renal complex, we often find that, where a president is not functioning, a secretary loses heart—and a poor secretary means a discouraged president. Support of them both by the members is the digitalizing force and is absolutely a duty whenever noted.

In a short address like this all we can say is that we believe the gathering of you men here today is of vital interest to the profession at large in more respects than can be successfully summed up. It is not to be expected that you will accomplish a spec-

tacular effect in one brief session. But, if you are the men we strongly suspect you of being, you will at least bring into fruition a solidarity that we would count as being ultimately invincible. You will learn to know each other, which is half the battle in anything, and you will be one of the greatest forces for good in the commonwealth. We trust you can see your way clear by what you accomplish, and by your serious, earnestlike manner of doing it, to make it a very high honor to be known as a member of your organization, so that men will bear the ills attendant to the office in order to say with pride they are a fellow in your following.

From today on we should all see to it that the members of a medical society are made quick and alive to the fact that the secretary is of enormous force and power in the shaping of its destiny, as he undoubtedly is and always has been.

It may not be amiss to say that the West Virginia Medical Association and its JOURNAL occupy a position nationally of which the members need not blush to contemplate. Will you not see that the Association of West Virginia Secretaries reaches even a higher position, known from coast to coast as capable of innovations in medical organization of which the country never before dreamed?

EARLY DIAGNOSIS OF PLACENTA PRÆVIA *

(WITH REPORT OF ONE CASE)

By H. G. STEELE, M.D.
Bluefield, W. Va.

To emphasize the importance of this subject, the reader will be greatly assisted in making this fact clearer to the listeners by using some of the statements and drawings in DeLee's latest *Obstetrics*.

The placenta may attach itself to any portion of the uterus, the fundal insertion being the rarest of all, the posterior wall being the most common site, next the anterior wall, then the sides, and next to the last in frequency the lower uterine segment—the isthmus uteri.

The lower edge of the placenta must be at least ten centimeters from the internal os, and well above the upper border of the isthmus uteri, to be normal. When the inferior border lies just at the isthmus uteri, we speak of low insertion of the placenta; when this edge just reaches the internal os, it is called placenta prævia marginalis. When only part of the opening of the cervix is covered, we speak of placenta prævia lateralis or partialis, and when the os is completely roofed over, placenta prævia centralis or totalis.

Since in the last class of cases the placenta lies almost entirely in the isthmus uteri, this might be called placenta isthmialis. All these terms are relative because of changes in the digital findings produced by the dilatation of the uterus—for example, a marginalis, after the cervix is open, may become a lateralis, and a placenta that seemed to cover all the cervix with two fingers' dilatation subsequently may cover only half of the opening.

In placenta prævia cervicalis the anatomic-histologic conditions resemble placenta accreta or increta, *i.e.*, the placental villi are not separated from the muscular substratum by a reactive decidua, but have grown down into and between the fibromuscular lamellæ of the cervix. The placenta, therefore, has to be dug out of the cervix—an operation attended by much hemorrhage; indeed, often having to be terminated by hysterectomy (Zangemeister).

Causation.—Placenta prævia is said to occur ten times as frequently in multiparæ as in primiparæ, and, in general, once in 1,000 cases; but no weight is to be placed on the statistics, since the figures given by various authors vary from 1 to 1,500 to 1 to 300.

Central placenta prævia occurs in less than one-fifth of the cases, and multiparæ are especially prone to the deeper varieties, and the tendency to the low insertion increases with multiparity and age.

Predisposing causes are chronic endometritis, multiparity (especially when the children come in rapid succession), subinvolution, and twin pregnancies.

The acting causes are: (*a*) Primary low insertion of the ovum near the internal os, or on its edge; (*b*) the development of placenta in the reflexa and its coming to lie over the os (Hofmeier and Kaltenbach).

(*a*) Owing, perhaps, to an endometritis, to lack of the cilia, or to some unknown anomaly of the ovum itself (*e.g.*, low nidation power), the egg slips down the uterine cavity and does not succeed in attaching itself until it reaches the neighborhood of the internal os, which may be narrowed by endometrial swelling.

Symptoms.—Hemorrhage is the first and most constant symptom, occurring in the last three months of pregnancy—most frequently in the eighth month.

* Read before the Mercer County Medical Society at Bluefield, West Virginia, on December 19, 1929.

Usually no cause is assignable, the patient awaking from sleep to find herself in a lake of blood, or, on arising from the toilet, sees fluid and clotted blood in the vessel. A painless, causeless uterine hemorrhage in the third trimester of pregnancy is almost pathognomonic of placenta prævia.

In central insertion of the placenta the bleeding usually occurs earlier than in the other varieties, but exceptions are noted, the cervix remaining closed and there being no hemorrhage until full-term labor begins. Such cases have weak pains and are, therefore, unfavorable.

In partial placenta prævia the pains of pregnancy are usually present; hemorrhage is, therefore, more constant; the cervix softens and dilates, and treatment during labor is facilitated.

Marginal placenta prævia may not cause hemorrhage until the very beginning of labor, or even toward the end of the first stage, and then it is slight.

During labor the low implantation of the bulky placenta causes malpositions and malpresentations—for example, breech and shoulder; delayed engagement of the head; abnormalities of rotation; prolapsis fúnis; weak pains—all these, plus the inevitable hemorrhage and the injuries so commonly inflicted by operative delivery. Air-embolism, because the uterine sinuses are so near the external air, and rupture of the uterus, because the musculature is weakened by the ingrowth of decida and the placenta, are commoner than usual.

DeLee says, under "Diagnosis": "A painless, causeless uterine hemorrhage in the last three months of pregnancy usually enables a direct diagnosis of placenta prævia to be made, but the conclusion must be certified by rectal or vaginal examination and the finding of placental tissue over the internal os."

While the writer of this paper agrees that these are good aids in making a diagnosis of placenta prævia, he wants to lay stress on making the diagnosis of the position of the placenta *in utero* by auscultation, in the sixth or seventh month, in most of the pregnant women who come under our care. When it is discovered that a portion of the placenta is located over the internal os, a positive diagnosis of placenta prævia may be made before any of the above symptoms are manifested, unless they come on unusually early.

We care not if the sound auscultated over the region of the uterus in the abdominal cavity is made by the rushing of the blood through the placenta, or through the placental attachment of the uterine wall. It is a bruiting sound that we hear in this area that is important and should be recorded in the last four months of pregnancy of every expectant mother coming under our observation.

When the placenta is attached on the posterior uterine wall and in the upper segment of the uterus, as is most often found by placing the stethoscope at the right or left side of the uterus in the region mentioned, we will nearly always get a bruit at one side and sometimes at both sides, demonstrating to us that we hear this sound in the body of the placenta, or at its opposite borders. When attached on the anterior wall of the uterus, this bruiting sound is heard throughout the area of the placenta. It is likewise heard on the posterior wall or anterior wall in the lower segment, or isthmus uteri.

Of course, when it is attached in the extreme upper portion of the uterus, a like sound will be heard over the fundus.

When a diagnosis of placenta prævia is made it matters not if it is a placenta prævia marginalis, lateralis, or totalis, the patient should be visited often and watched carefully; and if by special care and treatment she can be carried over until her eight and one-half months are up, it is believed she should be taken to the hospital and a classic césarean section performed, whereby both mother and baby may be saved.

It is well to say, when we suspect a placenta prævia or when it is likely that a pregnancy might be terminated by an abdominal section, no vaginal examination should be made or vaginal douches taken after the sixth month. If either mistake is carried out, a potential infection is suspected and the patient's life endangered.

During the last three months of pregnancy and the symptoms of placenta prævia, above mentioned, manifest themselves, and it becomes necessary to empty the uterus to save the mother and the hemorrhage has not been too great to make the patient unfit for an operation, it is believed advisable, after a reasonable effort has been made to check the hemorrhage, to take the patient to the hospital and perform a césarean section.

CASE.—Mrs. A. L., age 21, primipara. Personal history: Has had most of diseases of childhood; no other severe illness. Date of onset of last menstrual period, August 15, 1928; duration, five days. Estimated date of labor, May 22, 1929. Date of marriage, August 20, 1928.

Symptoms during present pregnancy (December 28, 1928): Little vomiting, slight nausea and some blurred vision.

Physical examination: General appearance not very good. Blood-pressure, systolic 130, diastolic 65. Slight pharyngitis; thyroid a little enlarged; some bronchial breathing. Light attack of influenza at this examination.

Some time during the sixth month the placental souffle was heard in the right lower quadrant. A diagnosis of placenta prævia was made, and two days before delivery, on account of the extensive area of the bruit, it was thought we had a double placenta. Right occipito posterior position was determined.

She began to have slight hemorrhages on May 17, 1929, and these were repeated until she was delivered May 28. The patient was taken to the hospital May 17, and a césarean section was advised; but soon after she arrived at the hospital the hemorrhages ceased, and, because of no more bleeding or symptoms of labor, she was returned home.

First stage of labor began at 10 A.M., May 27. I saw her at midnight, and, as the pains were slight, with no evidence of hemorrhage, I returned home and didn't see the patient again until about 10 A.M. the next day. The cervix was completely dilated artificially by 1 P.M.; likewise the membranes were ruptured at 12:45 P.M. The character of the pains was very weak.

Ether analgesia was produced now and again, with fairly good effect. The complication of this first stage was a little hemorrhage.

In the second stage the pains were very slight. Ether was administered at 1:30 P.M. to the surgical stage, and, when it was found impossible to deliver the baby with forceps on account of the unengaged head, a podalic version was performed and a live baby delivered at 2:10 P.M., producing a complete laceration of the perineum of the second degree. One cubic centimeter of pituitary extract was administered hypodermatically.

The perineum was repaired previous to the delivery of the placenta.

In the third stage the bleeding before the delivery of the placenta was moderate, and the bleeding after the delivery of the placenta at 3 P.M., by the Crede expression, with slight traction on the cord, was also moderate. The mechanism of delivery was a combined Schultze and Duncan.

Massaging of the uterus was kept up more or less throughout the third stage, and one cubic centimeter of ergot was administered hypodermatically as soon as the placenta came away. The patient was comfortably arranged in the bed, with hot-water bottles placed about her, and a saline proctoclysis was given.

The anesthetist, thinking the patient was recovering nicely, went home; but she died fifteen minutes later.

A few words about the placenta: The dimensions were 14 by 31 cm., with a piece apparently torn from the margin nearly to the middle, and around this lacerated area it was somewhat ecchymotic. It was extremely thin and the umbilical cord was attached near the center, with blood vessels leading to the laceration.

Condition of the patient the last thirty minutes before she died: General appearance, pale; mental condition, unconscious; pulse, weak and rapid; respiration of the Cheyne-Stokes type. Consistency of the uterus, fairly firm, slight bloody discharge. In addition to the above treatment she was given strychnin and digitalis hypodermatically.

Criticism.—If I were to handle this case over, the patient would not be permitted to leave the hospital without a césarean section having been performed, which it is believed would have saved her and the child.

After she returned home her husband and mother could not be persuaded to let us take her back to the hospital, even after the danger of her being delivered at home was thoroughly explained to them.

She might have been saved had I not repaired the perineum at the time, but delivered the placenta or packed the vagina well with gauze, allowing the placenta to come away later, and then repair the perineum at a subsequent time, when she had gained sufficient strength to undergo the operation.

Summary.—1. In making a diagnosis of placenta prævia and performing a césarean section (as above described), great hemorrhage might be prevented in not having to tear through the placenta.

2. In not dilating the internal os underneath the placenta a certain amount of hemorrhage is prevented.

3. An air-embolus is prevented when the placenta is detached before the cervix is dilated.

4. High-grade anemia is prevented when you don't have a great loss of blood.

5. A case of spanemia (from slight dribbling of blood) may be prevented.

6. In doing a césarean section before labor pains are present or become strong, a uterine rupture might be avoided in case the musculature should be weakened from the low attachment of the placenta.

7. Bits of placental tissue are not likely left in the uterus, as might be done should the placenta be delivered through the cervix.

8. Fœtal asphyxia is avoided.

9. Injury to the fœtus is not likely to occur as in a version if forceps are used, or a limb of the baby be pulled through the cervix to be used as a tampon against the bleeding placenta, as in the Braxton-Hicks method.

PROGRESS MADE IN A BETTER MILK SUPPLY FOR BLUEFIELD *

By D. B. LEPPER, M.D., C.P.H.
Bluefield, W. Va.

Prior to 1927, milk coming into Bluefield was of very poor quality and the bacterial count ran into millions in some instances. There were but a few dairymen who were putting out a good product all the time.

We early realized that, for a better milk supply, a change must come about. First, we must have a workable milk ordinance; second, a personnel to supervise or direct the work. The city adopted the standard milk ordinance and appointed a milk inspector, or, more properly named, a milk instructor.

The work of the inspector is to visit all the dairies supplying milk to Bluefield—there are 103 of these. He must visit each dairy twice a month. It means getting up in the morning at four or five o'clock, watching the sterilizing of the milk utensils and the cleanliness of the particular dairy, and checking of twenty-five requirements necessary in producing good milk. The dairy inspector makes it his business to be at as many dairies as possible during milking time, because it is then that trouble is most likely to occur.

During the last three years there have been one typhoid and four scarlet fever cases at the dairies. The health department immediately took care of the situation, and in no instance was another case of scarlet fever or typhoid traced to one of these dairies. Two dairies were refused permits to sell milk because tuberculosis was present on the place.

Important and necessary requirements that the inspector must have enforced are:

1. All the stock must be tuberculin tested. This year there was only one reactor for tuberculosis out of 1,570 tested.

2. Dairy barns must be right: floors concrete, the building properly lighted and clean, the manure properly disposed of, etc.

3. The milk room floors must be of concrete, walls painted so that they can be easily cleaned, properly lighted and screened, etc.

4. Toilets must be proper as to location, construction, and operation.

5. The water supply must be accessible, adequate, and of good quality.

6. Utensils must be properly constructed, clean, sterilized, and kept from recontamination with the least amount of handling.

7. At milking the udders, teats and flanks must be free from any visible dirt, hands clean and disinfected, clothing clean, milk stools clean, and removal of milk to milkhouse must be immediate.

8. Bottling and capping must be right and state the grade of milk to be sold. Health certificates must be required of all employees.

Supplementing the work of the milk inspector, we have a sanitary inspector for the city proper. He goes east and west, north and south, and gathers samples of milk from the wagons, bringing them to the laboratory.

The bacteriologist now tests these samples for sanitary quality—that is, for visible dirt, proper amount of butterfat, solids not fat, bacterial count, and so forth. Grade A milk must not exceed fifty thousand bacteria per cubic centimeter. The laboratory is also used to detect the presence of water and evidence of skimming, so that the public will not be cheated.

Bluefield is supplied with approximately 1,200 gallons of milk per day, and our milk progress program is not finished, but is on its way.

We have two pasteurizing plants. I want to say here that there is a lot of misinformation about what pasteurizing is and what it does, though the process is familiar to some of us. In the first place, pasteurizing milk does not take out the dirt—it does not make dirty milk clean—but it does make a superior product if properly produced previous to pasteurizing. There are different viewpoints of pasteurization. Some of our doctors boil milk; others want to prescribe raw milk for babies. We believe pasteurized milk is necessary in big cities. It is an additional safeguard. Now, suppose you have milk with one million bacteria per cubic centimeter. Some of these bacteria may be pathogenic. Suppose you have milk with fifty thousand bacteria, or less. There will likely be few pathogenic germs. It may be true that pasteurized milk destroys some of the vitamin contents, but this is better than a pathogenic milk, and by adding orange or tomato juice the vitamin short-

* Read before the Mercer County Medical Society at Princeton, W. Va., on October 30, 1929.

age is overcome. It is stated that the toxins still may remain in milk after pasteurizing. That may be true, but they are in the raw milk, too.

Heating milk to 144° for one-half hour and rapidly cooling kills most of the pathogenic bacteria. The health department supervises the pasteurizing plants and checks the temperature by dials which are locked up and of which we hold the keys.

The thermal death point of a germ is that temperature at which the germ dies, and the germs of scarlet fever, diphtheria, septic sore throat, Malta fever, etc., are killed at pasteurizing temperature.

We have had a lot of opposition in striving for better milk, and we can't expect more from those who do not want to go to the trouble of serving the public. Two years ago a delegation of eight or nine dairymen came after me hot. They were from Tazewell. They came before the board, protesting against our rigid requirements; but when the points were separately discussed and explained, they admitted we were right and the public should get good milk.

I believe Bluefield was the first place in West Virginia to adopt and enforce a standard milk ordinance, and as a result of its success the city of Huntington has adopted a similar ordinance.

I would like to say that we are not insisting that the dairymen shall produce grade A milk. We tell them, "We would like to have you produce grade A milk; but if you don't, we must grade you according to the quality of the milk which you are producing. You must indicate that grade on the article you are offering for sale."

The city of Bluefield had a milk ordinance, excellent in many respects; but the regulations passed by the city at that time were found to be too difficult for the dairymen to meet and more difficult of enforcement. One of the main features required by this ordinance was the bacterial count of 10,000, which several of the milk producers met only infrequently. With these conditions existing, it was up to the health department to recommend a change; so, after much discussion, the standard milk ordinance was considered, the old ordinance rewritten, and, with few exceptions, the standard milk ordinance was adopted.

Why this ordinance is better than most others of its kind is to be seen in the fairness to the great majority of milk dealers; but, more than that, it is practical and enforceable.

The new ordinance for Bluefield, West Virginia, was adopted in May, 1927, and has, for the most part, been satisfactory. Experience has proven that it is better to have the standard milk ordinance without reservations and eliminate lower grades of milk as rapidly as is deemed expedient, because, if too high a standard is set, difficulties are likely to arise and defeat the purpose meant by the passing of the ordinance. The habit of starting with too high a standard and resorting to continued threats of enforcement to attain said standard will lead to anger on the part of the dairymen who have met the requirements and laxness on the part of those who have not met the standard. Had the ordinance been adopted in full, threats would not be necessary, as there would be a grade for each type of dairyman.

The city of Bluefield, in 1926, had the second highest infant mortality rate in the state, namely, 113 infant deaths for every 1,000 live births. In 1927 this was reduced, after our milk supply began to get better, to 85 infant deaths per 1,000 live births. In 1928 it was reduced to 75 deaths per 1,000 live births, and for 1929 it is estimated that infant mortality will have been reduced to 65 infant deaths for every 1,000 live births. We do not wish to say that the supervision of the milk supply, under the present ordinance, has been wholly responsible for this reduced infant mortality, but certainly it has been a great factor and, in our opinion, has played a large part in the reduction of infant deaths.

We have found it important not to be too strict in enforcing the regulations immediately following the adoption of the ordinance, because immediate enforcement will not correct misunderstandings and it does frequently lead to unpleasant opposition on the part of the dairymen.

On the whole, from our experience, the application of the standard milk ordinance is the most practical method yet devised for controlling and supervising the public milk supplies. Since the adoption of the standard milk ordinance, our dairy industry has, indeed, been more stable, and "bootleg" milk of questionable source and quality is much less prevalent. The volume of milk has appreciably increased since the adoption of the ordinance. One case of violation of the ordinance has been successfully prosecuted in the municipal court, and while a few more prosecutions may be anticipated or necessary, the health department believes less force and more coöperation and education will be more successful, police power being the last resort.

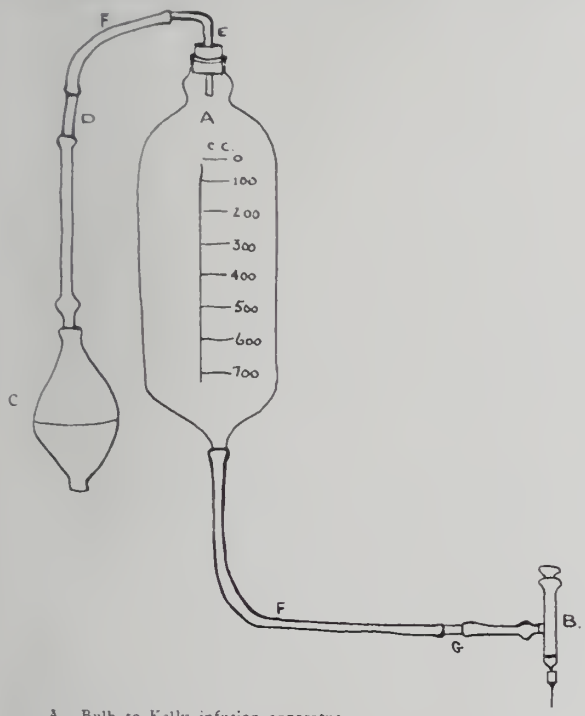
The dairymen have spent $40,000 in improving their dairies since the adoption of the standard milk ordinance.

APPARATUS FOR INDIRECT BLOOD TRANSFUSION *

By EDNA HARRIET BLOSSOM, B.S.
AND
LUTHER C. DAVIS, M.D., F.A.C.P.
Fairmont, W. Va.

Almost everybody engaged in doing blood transfusions will, sooner or later, evolve a means of carrying out this procedure that is eminently satisfactory. Here at Cook Hospital we are using an apparatus that is so satisfactory we feel it merits description. A Kelly infusion bulb to which is attached a Luer-Kaufman syringe is used.

The apparatus is sterilized by boiling in distilled water. The water is drained therefrom and 25 c.c. of buffered 50% glucose is shaken in the bulb and then allowed to fill the tube and syringe. The blood



A. Bulb to Kelly infusion apparatus.
B. Kaufman syringe.
C. Atomizer bulb for making pressure on the contents of A.
D. Luer filter tip, containing cotton to prevent blowing of dust from rubber bulb into blood.
E. Sterile rubber stopper with glass tubing. Held in mouth of A by clamp.
F. Sterile connecting tubing.
G. Window.
Because of pressure, all tube connections are wired.

is collected as for any indirect method, mixed with citrate solution and filtered through sterile gauze into the bulb. Where the total volume is 500 c.c., 50 c.c. of 2½% sodium citrate is used. The filter is rinsed down with 25 c.c. of buffered glucose solution and the apparatus made ready for use by fixing the stopper and bulb on with the clamp. After the needle is inserted into the vein of the recipient, the rate of flow may be regulated at will by varying the pressure on the bulb.

The advantages of this apparatus are:

1. Simplicity. It requires less skill on the part of the operator than any procedure we have previously tried.

2. Speed. It is the quickest of the indirect methods of transfusion, if speed is desired.

3. The Kaufman syringe allows hunting for the vein of the recipient and gives positive evidence when the needle is properly placed. This is a boon to those not skilled in picking up veins when they are flat or deeply placed. We have never cut down on a vein or failed to pick it up with this syringe.

4. Unlike direct methods, the administration of blood may be suspended and resumed at will.

5. The use of the Kelly pressure bulb allows the giving of transfusions through small (25-gauge) needles if necessary. A full transfusion has been given to an 18-months-old infant through the median basilic vein in this manner.

6. The use of glucose, because of its food value and antiketogenic property, has seemed to us to be more indicated than normal saline solution in most instances where transfusion is of value. We believe that the frequency and severity of reactions are minimized by its use.

Caution should be exercised as the level of the blood enters the tubing. At this point the pressure in the bulb should be released, as otherwise it would be quite easy to send air into the vein.

* Original paper.

THE MEDICAL DEFENSE FUND *

By C. H. MAXWELL, M.D.
Morgantown, W. Va.

At the Martinsburg meeting, 1929, a motion was made and carried, abolishing the defense feature of our by-laws. Here is how the by-laws may be amended:

"These by-laws may be amended at any annual session by a majority vote of the House of Delegates present at that session, after the amendment has lain on the table one day."

* This paper was originally scheduled for publication in the January, 1930, issue; but it did not reach the hands of the printer until the January number was off the press.

Since the preparation of this article, the county secretaries have been instructed to collect for the defense fund.

The amendment did not lie on the table one day, therefore it was passed in an irregular, illegal, and probably unconstitutional way, and, consequently, is not an amendment. This attempted amendment to the by-laws had never been discussed in a regular or formal way at any meeting of the House of Delegates or Council meeting. There had been no general demand for the repeal of the defense feature of the by-laws. This had been my impression, and I sent out an inquiry to most of the society presidents and secretaries in the state, and found very little sentiment favoring abolition of the defense fund. All the societies did not respond, but I got replies from twenty-two societies, either from the officials or resolutions from the societies on the matter. Fifteen of these societies condemned the action of the state association, while one (Cabell) voted to uphold the state association, saying it thought the association had outgrown that kind of insurance. The Ohio county secretary thought it best not to bring the subject before the society, as all the delegates from that society voted for the abolition of this feature of the by-laws. The president of the Fayette county society feels that some other kind of insurance is best, but is open to conviction on this point.

Since the establishment of the defense fund in 1912, the number of decisions against the doctor has been small. There have been many suits or threatened suits, but very few went to trial, and in most of these cases the doctor has been vindicated.

It should also be strongly emphasized that not more than fifty per cent of our members carry group insurance, and, should the defense feature be abolished, they would be left without protection. It should further be impressed on the association that the cost of insurance in corporations is twelve to twenty times greater than ours, which means much to some of us who have many places to put our earnings.

Dr. Love, president of the Grant-Hardy-Hampshire society, said: "I think it not only deters some who would be inclined to bring suit, but, in our society at least, it has induced some doctors to become members."

Dr. McGovern, president of the Doddridge county society, said: "I am not in favor of the defense feature being dropped. In fact, I did not not know it had been up for discussion. All members of the society are in favor of the defense feature."

Dr. Clements, president of the Mercer county society, said: "It is not a good idea to drop this insurance. The more united we stand along this line, the more deterring effect it will have upon those inclined to torture us with suits." This society passed unanimously a resolution favoring the continuance of the defense fund. Marion, Harrison, Barbour - Randolph - Tucker, McDowell, Brooke, and Monongalia did the same.

Dr. McDonald, president of the Brooke county society, said: "We were not aware that this feature was to be discontinued, and are uninformed as to why it was proposed to abandon it."

Dr. Snyder, president of the Lewis county society, said: "I consider it was a great mistake to dispense with this defense feature, and it should be reconsidered."

Dr. Brake, secretary of the Harrison county society, says: "At our last county medical society meeting, the question of abolishing the defense fund was discussed and condemned. In fact, I have heard this action of our state medical association severely criticized on several occasions. Personally, I think the matter must have passed without due consideration."

Dr. Bruns, Wayne county society's president, says: "It is my opinion that it was a mistake to do away with the defense feature of our association. Even if practically all our members carry indemnity insurance in insurance corporations, the defense feature of our state association carried with it a moral effect worth much more than the small cost of it."

Dr. J. C. Irons, secretary of the Barbo Randolph-Tucker society, says: "I feel that it was a mistake, for many of our members are held in the society to get the benefit of this protection." And his society passed a resolution strongly condemning this action of the state association.

Dr. Stine, president of the Taylor county society, disapproved the action taken by our state association. The question was not put to the society as a whole.

Dr. Eagle, president of the Eastern Panhandle society, says: "I think it will be a very serious mistake to do away with the defense plan. It is a splendid thing, and should be given one hundred per cent support by the physicians of West Virginia."

Dr. Goff, secretary of the Parkersburg Academy of Medicine, says: "I assure you our society will be glad to take under consideration the medical defense of our state association. Personally, I think as far as the protection by actual money is concerned, the members are better off to be insured through some other channel; but as a threat to the public against

malpractice suits, this feature is very clearly seen."

The McDowell county society secretary, Dr. A. G. Rutherford, says: "It was the opinion of each member present at the November meeting that the state association erred when it discontinued the defense feature, and it was the unanimous expression of our society that it should be continued and kept in force."

The quotations from the officials of the various societies show that there is little inclination over the state to uphold the ill-timed attempt to abandon the defense feature. There has not been advanced any cogent reason why this feature should be abandoned.

The expense is negligible, and the moral effect is out of all proportion to the monetary involvement. When a threat of malpractice suit is made, the one that makes it goes slow when informed that the entire membership of the West Virginia State Medical Association stands back of us, and every one has chipped in to a fund for defense, and will keep on chipping in till the case is fought through all the courts. Dr. Linz's slogan, while chairman of the Defense Committee, was "No compromise." Or, as it was put up to one evil-minded one, "We will fight you till hell freezes over and the devil comes out on the ice."

It is this unity of purpose and this grim determination to stand back of our unfortunate brother that helps more than the financial backing, though the sum of three hundred dollars is no mean pittance to aid the unfortunate one.

This radical change in our by-laws should have been discussed and should have been announced beforehand, so that the matter should have been thought over and not passed on the spur of the moment. It was this lack of previous announcement and thorough discussion that irritated the rank and file of our members over the state, and helped cause the widespread dissatisfaction over the action of the Martinsburg meeting.

It would probably be well for the secretaries of the various societies to collect this defense contribution as if there had been no attempt to do away with it, for it is a certainty there is no intention on the part of the men over the state to accept this resolution as their final wishes in the matter.

The Antipellagric Vitamin

Evidence has been furnished that the so-called accessory food factor formerly designated as vitamin B and supplied in comparative abundance by yeast apparently contains, in addition to the antineuritic vitamin, a factor which promotes growth and cures and prevents dermatitis in rats; consequently, it has been regarded as identical with the "P-P" factor described by Goldberger and others as curative and preventive of human pellagra. The newest American designation of this is vitamin G—the vitamin B_2 of British biochemists. There is little doubt that both of these water-soluble vitamins are essential to growth and well-being; and it seems reasonably certain that pellagra is due to a vitamin deficiency. It is now known that unheated yeast is rich in both and that cereals contain more vitamin B than vitamin G; milk and meat, the reverse. The vitamin G value of wheat and maize is low, as is that of dried legumes such as peas. Meat and egg-yolk are richer in vitamin G than are the cereals, while liver and fresh milk are excellent sources of this dietary adjuvant. (*Journal A. M. A.*, October 12, 1929, p. 1149.)

Radioactive Waters and Solutions

Not many years have passed since the Council on Pharmacy and Chemistry, basing its decision on the then available evidence, admitted to New and Nonofficial Remedies various preparations containing in solution radium or radium emanation (radon), and various devices for causing radium emanation to pass into drinking water. The evidence was not extremely well controlled or profuse in amount, but there seemed to be a demand by physicians for such preparations and the Council considered it worth while to set up at least minimum standards of radium content or radium activity. Actually, innumerable preparations were on the market which contained insufficient radium to have any demonstrable effects. Now the Council has issued the following statement: "From an examination of the available evidence, it appears that the value of the internal use of radium solutions or of water containing radon in chronic arthritis, gout, neuritis, and high blood-pressure is not demonstrated by controlled clinical evidence; that, in spite of many years of trial, acceptable evidence has not become available, and until such evidence does become available the Council has decided not to accept generators for the production of water charged with radon or radium solutions intended for intravenous use." The announcement by the Council disposes of the claims made for all sorts of solutions and for the devices to be used in preparation of such solutions, whether they contain considerable amounts of radium or but insignificant traces. (*Journal A. M. A.*, September 7, 1929.)

CASE REPORTS

AIR INFLATION OF KNEE JOINT AS A THERAPEUTIC MEASURE *

A PRELIMINARY REPORT

By E. BENNETTE HENSON, M.D.
Charleston, W. Va.

The injection of air or oxygen into joints for diagnostic purposes has been utilized by a few surgeons the past few years in obscure lesions in which the usual method of taking x-ray films has failed to aid in a definite diagnosis. I have found the method of distinct value in diagnosis of loose semilunar cartilage and kindred conditions, and have felt that a wider use should be made of air inflation of joints, not only in diagnosis but also in treatment of joint conditions. The method is safe, since no deaths or untoward effects have been reported, and the structure of a joint is such that an embolus should not be expected. I thought the method would be beneficial in breaking up the residuals of a joint following trauma in which limitation of motion was present, or perhaps in cases of arthritis in which the acute symptoms have subsided, leaving a joint devoid of fluid with limitation of motion. I have used air inflation in these two types of cases, and the results in the few cases I have treated are so uniformly good that a preliminary report is warranted.

Lucille L., age 21, was first seen by the writer on September 7, 1929, with the left knee held in sixty degrees flexion deformity with inability to move the joint. The patella was fixed; the capsule was thickened with apparently no fluid in the joint.

The mother said, "The water has gone out of the joint. The temperature was normal. No other joint was involved. History was to the effect that, while visiting in Philadelphia on July 5, 1929, or two months before, she was admitted to the Hahnemann hospital with acute rheumatic fever complicated by endocarditis, leaving the hospital on her own responsibility August 16th. Their records were sent to me as follows: Vaginal smear, Wassermann, blood culture 72 hours, all negative; leucocytes 11,400; urine, faint trace albumin. X-ray, made on August 12th, "shows a haziness at the base of the spine of the tibia, which I believe to be pathology in this area. The joint on the internal side shows some increase in width, roughening of the upper border of the tibia."

The residuals of infection had left an ankylosed knee, the extent of which could not be determined without x-ray. After one week in bed at home, with traction in line with deformity with only ten degrees correction of deformity, she was sent to the Charleston General Hospital for x-ray and probably an air inflation of the joint to break up recently formed adhesions. There was little change noted as compared with the former x-ray report. Air inflation was decided upon in the hope of increasing the range of motion without resorting to an anesthetic. The knee was prepared in the same way as prior to a joint operation. A small bleb was made

FIG. 1.—Lateral view before and after air inflation. Note the dark spaces indicating air area.

* Read at Staff Conference, Charleston General Hospital, January 3, 1930.

in the skin on the inner side of the patella with novocain; then a small needle, 22-gauge, pierced the capsula. No fluid was obtained. The plunger, in a 50-c.c. tight Luer syringe, then forced air within the capsule. Only slight pain was complained of beneath the patella. An x-ray was immediately taken (Figures 1 and 2). Light massage of knee loosened the patella, and after a few minutes of this massage, motion of 40 degrees was obtained easily without pain. Arc of motion prior to injection was 120–130, after injection 100–140. The patient was allowed to go home to start massage and active motion with weight-bearing. This she did without pain, and, after one month's observation, arc of motion 80–160 with every promise that full extension could be obtained. The patient has not been seen since.

FIG. 2.—Anterior and posterior views before and after air inflation.

I have used the inflation on five other knee joints: four of traumatic type and one a subsiding arthritis. This method has not been used in other joints, because I have not seen a case in which its application was deemed necessary.

Air, rather than oxygen, was used on account of its simplicity. No untoward effects, such as infection, have been noted in the use of air in treating post-traumatic headache by its injection in the spinal canal. For that reason, I adopted the same method in treating the knee joint.

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CASE OF RENAL TUBERCULOSIS WITH AUTOPSY FINDINGS

By G. G. IRWIN, M.D.
Charleston, W. Va.

The following case seems worthy of report for three reasons: (1) The presence of adhesions in the bladder; (2) the association of tuberculoma of the brain and urinary tuberculosis; (3) the fact that the lungs and liver escaped involvement in the tubercular generalization.

I am of the opinion that the adhesions in the bladder represent an effort to wall off a tubercular process in the lower ureter and right side of the bladder secondary to the renal tuberculosis.

The tuberculoma in the brain is an interesting topic for speculation. At the time of admission there was nothing to justify belief that there was trouble in the brain. Its appearance after cystoscopic examination conceivably might be a coincidence, or, on the other hand, might be a consequence in that manipulations incidental to cystoscopy might have set up a tubercular septicemia with the metastatic abscess resulting in the brain.

For reasons which can not be gone into at this time, I believe that the brain condition is a consequence of pyelography.

Charleston General Hospital, No. 24326, male, age 45, coal miner, admitted to the hospital September 8, 1929. His complaint was a dull pain in the right side, of five days' duration.

Present illness: Patient states that he has had pain in his right loin for the past five days. There is no radiation of the pain, no nausea or vomiting. This pain has been present occasionally for the past ten

years, as a rule amounting to only a discomfort. At present he also has frequency of urination and dysuria. There has been no hematuria. His urine occasionally looks cloudy. Frequency and nocturia have been present for years.

Past history shows the usual childhood diseases; no operations, no accidents.

Family history is negative except for tuberculosis and cancer. Relatives and collaterals show good history.

Physical examination: Patient is 5 feet 7 inches in height, weight 160. Nutrition good. Temperature 101°, pulse 110, respirations 20, blood-pressure 140/70. Mouth shows teeth in bad condition, head and neck otherwise negative. Heart sounds are normal; heart is not enlarged. Chest shows decreased broncho-vesicular breath sounds anteriorly and posteriorly, harsh expiratory sounds, normal inspiratory sounds; resonance is normal on percussion. On the left side, anteriorly, at the level of the third interspace in the mid-clavicular line, are heard some mucus râles. Expansion equal both sides, no lagging.

Abdominal examination shows some tenderness and slight splinting of the muscles in the region of the right kidney. Kidney is not palpable on left or right side; liver is not palpable. Abdominal examination is otherwise negative.

External genitalia: Extremities and prostate are negative.

Blood count: 4,500,000 red cells, 85% hemoglobin, 13,000 leucocytes, 86% polynuclears, 14% small lymphocytes. Blood urea showed 19.5 mgms.

Urinalysis showed specific gravity 1008, acid reaction, 1 mm. ring of protein, no sugar, a few blood cells and an enormous amount of pus; no casts.

Cystoscopy showed a slight median lobe enlargement. The bladder was moderately irritable, urine turbid. The bladder mucosa showed a patchy cystitis of the right wall and right side of the trigone, roughly limited to the region of the right ureter. In addition, there were bands of adhesions at the junction of the trigone and bladder wall, behind the region of the right ureter. The effect of these on distention of the bladder was to produce slight saccules of the bladder mucosa. The right ureteral meatus was atrophic, slightly inflamed; no contractions were seen. The left meatus was gaping and cicatrical. No contractions were seen, although urine occasionally leaked through it. Indigo carmine appeared from the left side in thirteen minutes; not at all from the right side in thirty minutes.

Cystogram showed a normal outline of the bladder. There was reflux up the left ureter to the junction of the lower and middle thirds. Plain x-ray of the kidney regions showed in the region of the right kidney a mass partaking of the outline of a kidney pelvis, with a dense periphery and an inner portion of less density. This was roughly two inches by one inch. If it were not for the difference in density, this mass could well be taken as a staghorn calculus filling the pelvis of the kidney.

Bacterial examination of the urine for tuberculosis was negative. On September 16th, under spinal anesthesia, cystoscopy was repeated. The adhesions noted at the former examination were not noted, although there were superficial ulcerations where they had been present. Both ureters were catheterized, using No. 5 catheters, with extreme difficulty. A right pyelogram was taken; 10 c.c. of fluid did not cause any pain. This showed a pyonephrosis of the right side.

Several examinations for tubercular bacilli in the urine between the time of the two cystoscopies were negative. Nevertheless, it was obvious that we had to do at this time with a dead right kidney, causing pain and discomfort, and a tuberculous left kidney. Right nephrectomy was decided upon.

Immediately after the last cystoscopy, patient was posted for operation four days later. On September 17th it was noted that the patient had a slight palsy of his right facial muscles and complained of difficulty in swallowing.

Neurological examination elicited the impression of a vascular lesion of the left hemisphere. Wassermann test of the blood was negative. Spinal fluid showed 6 cells per cubic millimeter; globulin present; sugar 55.55 mgms., chlorides 511 mgms. Spinal fluid was Wassermann-negative in all dilutions.

Following this, patient slowly developed a right-sided hemiplegia and died October 1st, fifteen days after cystoscopy, ten days after the onset of his facial palsy, twenty-one days after admission.

Autopsy.—The spleen was slightly enlarged and peppered with minute, translucent, grayish nodules which showed a well-marked tendency to grouping, forming scattered mulberry-shaped masses. The mesenteric lymph nodes were enlarged and caseous. Right kidney was very much adherent to the surrounding tissue. This kidney appeared as a lobulated, sacculated mass. The cortex was very thin, showing practically no secreting kidney substance. The capsule was perforated and surrounded by

granular tissue. There was marked thickening of the ureter; the lumen was closed.

The left kidney was slightly enlarged, not unduly adherent, showed several caseous areas at the cortico-pyramidal junction. The bladder was trabeculated and filled with about 250 c.c. of limpid urine. The lining mucosa in the region of the right ureter and trigone showed a ragged ulceration with nodular base and right fibrin production.

The brain showed several minute tubercles in the base, about the sylvian fissure and the ependymal lining of the ventricles. The ventricles were distended with a turbid, flaky fluid. About the left temporal convolution there was a sharply outlined mass which was three by two centimeters in diameter, suppurating and surrounded with a grayish, granular zone. The pus from this tumor was very rich in fibrin.

There was no appreciable change in the other organs, but a large amount of pneumokoniosis in both lungs. It is remarkable that the lungs have escaped tubercular changes.

Microscopic examination of the pus from this brain abscess showed tubercle bacilli, staphylococci and streptococci.

Histology: Spleen, miliary tuberculosis; brain, tuberculoma of the left temporal lobe; kidney, right tubercular pyonephrosis, left beginning caseous tuberculosis.

Anatomical diagnosis: Tuberculoma caseosa of the brain; meningitis basilaris tuberculosa; pyonephrosis of the right kidney; tuberculosis of the left kidney, miliary tuberculosis of the spleen.

TUBERCULOSIS ABSTRACTS

Human Tuberculosis of Bovine Origin

The first clear differentiation between the bovine and human types of tubercle bacillus was made in 1898 by Theobald Smith. When it became evident that the bovine tubercle bacillus may be conveyed to the human through the drinking of milk, the sanitary control of this important food was demanded. Pasteurization and the gradual but steady elimination of tuberculous cows have undoubtedly been factors in reducing tuberculosis, particularly the osseous and lymph glandular forms commonly seen in children. In England, the problem seems to be more difficult and unyielding than it is in the United States, according to William G. Savage, health officer of Somerset, from whose book, "The Prevention of Human Tuberculosis of Bovine Origin," most of the following information is abstracted:

There is little statistical evidence to prove the direct relationship between the extent of bovine tuberculosis among cattle and the incidence of human tuberculosis of bovine origin. Satisfying studies of this kind are obviously difficult to make, and those that have been made are inconclusive.

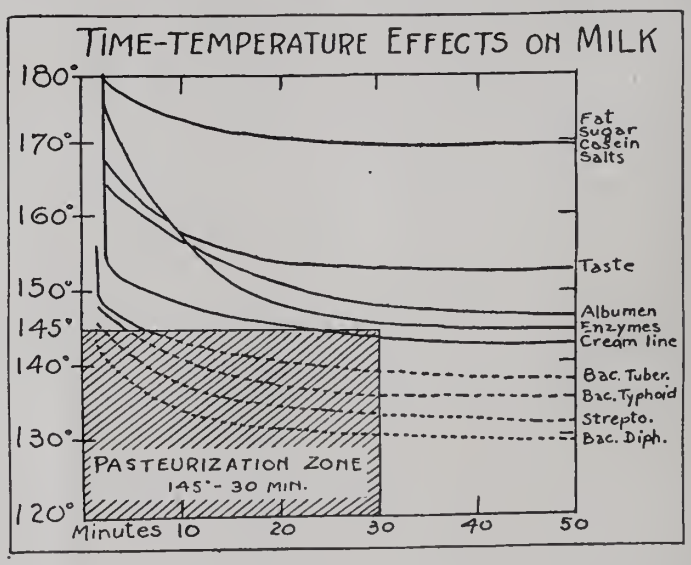
Prevalence of Disease.—The exact prevalence of bovine tuberculosis among humans is not easy to determine. It is impossible to decide by clinical means whether a given case is of human or bovine origin, although the organism may, by a somewhat laborious bacteriological procedure, be isolated and identified. Several bacteriologists have undertaken studies of this kind, and their total number, while not large, is enough on which to form an estimate of the percentage of bovine tuberculosis. On the basis of these studies, Savage arrives at the conclusion that 1% of the respiratory and 23% of the non-respiratory cases in England are of bovine origin. From this, he calculates that in 1927 a total of 310 cases of respiratory and 1,635 cases of non-respiratory tuberculosis which ended in death were of bovine origin. Moreover, the cases not ending in death, while not ascertainable, must be considerable, and responsible for a vast quantity of suffering.

Extent in United States.—In the United States, Park and Krumwiede studied, in 1910, the bacteriological origin of 435 cases of tuberculosis. About 7% of the entire group (all ages) were of the bovine type. However, of the group under five years of age, about one-third were of bovine origin, and slightly over half of these were involvements of the cervical glands. Subsequent to that study, New York City adopted the practice of pasteurizing all milk supplies, with the exception of about 1.5% which was certified. This did not apparently affect the incidence of pulmonary tuberculosis among children, but the percentage of cervical cases of bovine origin was reduced to less than half its previous figure.

Method of Transfer.—Human tuberculosis of bovine origin may nearly all be charged to the use of milk containing living tubercle bacilli, though cream, butter and cheese can not be altogether ignored. The milk is infected usually from the lesions on the udder, though contamination of milk from feces containing excreted tubercle bacilli is also common. Every cow that reacts positively to the tuberculin test should, therefore, be regarded as a potential source of infection for both human beings and cows.

Control of Bovine Tuberculosis.—Methods for dealing with the problem in the United States are primarily two-fold: the eradication of the disease among cattle by slaughtering positive tuberculin reactors, and the pasteurization of milk. The Federal Department of Agriculture, through the various state bureaus and departments of animal industry, has pursued with vigor its policy of "cleaning" herds and accrediting those free from the disease. While there are many practical difficulties in the way and the cost in terms of subsidies for slaughtered cattle is expensive, the percentage of infected cows is gradually lessening.

The practice of "designating" or certifying certain milk will probably never be practicable on a wide scale because of the difficulty of adequate, reliable inspection. Nor does certification take sufficiently into account possibilities of infection other than tuberculosis, such as scarlet fever, septic sore throat, and typhoid fever. Recently, cases of undulant fever have been reported as having been acquired from accredited herds free from tuberculosis.



Heat Treatment of Milk.—Pasteurization admittedly has its failings. Machinery and methods have been perfected to a high degree of efficiency, but the human factor frequently fails, and this can be controlled or supervised only with great difficulty. Moreover, standards regulating the process vary widely according to communities; pasteurization may mean something entirely different in one city than it does in another. However, efforts are now being made by the U. S. Public Health Service to restore order out of chaos. With the aid of leading state health officers, the Service has drafted a standard milk ordinance, suitable for adoption by municipalities. The particular advantage of the ordinance is that it defines clearly the many commercial and technical terms involved in milk production methods. Pasteurization, it states, "shall be taken to refer to the process of heating every particle of milk or milk products to a temperature of not less than 145 degrees Fahrenheit, and holding at such temperature for not less than 30 minutes in pasteurization apparatus approved by the health officer, the temperature and time being automatically recorded by a temperature and time recording device approved by the health officer."

No Injurious Effects.—Milk properly pasteurized is not injured as a food to any appreciable extent. Apparently, vitamins A and B are not affected; vitamin C is reduced in amount, and little is known as to the fate of vitamin D. This slight loss of vitamin content may be restored in a child's feeding by the addition of a small quantity of fruit juice.

How heat at given periods of time affects the food constituents and qualities of milk, as well as certain common bacteria which may contaminate milk, is shown in the chart.

According to the author, the American method of dealing with bovine tuberculosis is not applicable in England because the dairy business is organized on a much more haphazard and decentralized basis, making supervision almost impossible, and also because the slaughter of some 40% of the dairy cattle (which would be necessary) would impoverish the state and also cause a milk famine. He suggests a practical but elaborate plan of gradually cleaning the herds. Space forbids discussion of details, which seem sound and workable.

Apparently assuming that the general practice of pasteurization would be too readily seized upon as a substitute for the more radical measure of eliminating tuberculosis among cattle, the author of the proposed English plan minimizes the value of pasteurization and speaks of it as "a confession of failure." With this feeling, American sanitarians would surely not agree. Clean milk regulations have not discouraged the campaign to free cattle from tuberculosis; that being a worthy object in itself, viewed from an economic standpoint. Pasteurization is not advocated as a means of making dirty milk clean. The ideal is to produce milk as clean as possible and to supplement this by heat treatment.

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R. A. Ireland, Charleston, chairman; R. H. Walker, Charleston; James McClung, Richwood; C. R. Ogden, Clarksburg; D. A. MacGregor, Wheeling.

Committee on Medical Education

John N. Simpson, Morgantown, chairman; W. T. Henshaw, Charleston; W. S. Fulton, Wheeling.

Committee on Professional Relations

John R. Shultz, Charleston, chairman (4-year term); A. G. Rutherford, Welch (5-year term); W. R. Goff, Parkersburg (1-year term); Hugh G. Nicholson, Charleston (2-year term); E. P. Smith, Fairmont (3-year term).

Workmen's Compensation Committee

W. A. MacMillan, Charleston, chairman; C. A. Ray, Charleston; John E. Cannaday, Charleston.

Committee on Public Health

David Littlejohn, Charleston, chairman; John Thames, Charleston; Will McLain, Wheeling.

Surgical Section

A. G. Rutherford, Welch, chairman; G. G. Irwin, Charleston, secretary.

Eye, Ear, Nose and Throat Section

F. T. Scanlon, Morgantown, chairman; S. S. Hall, Buckhannon, secretary.

Hospital Association Officers

J. S. Turk, Wheeling, president; B. I. Golden, Elkins, president-elect; W. E. Vest, Huntington, first vice-president; A. G. Rutherford, Welch, second vice-president; Mr. Joe W. Savage, Charleston, secretary-treasurer.

PRESIDENT'S PAGE

THERE has been considerable agitation of the profession throughout the state over the action of the House of Delegates in abolishing the Medical Defense Fund at the Martinsburg meeting. Although this was done without a dissenting vote, it seems not to have mirrored the unanimous opinion of the profession. Dr. C. H. Maxwell, of Morgantown, has undertaken to glean a cross-section of professional opinion on the subject and it is given elsewhere in this issue. His article was intended for the January JOURNAL, but, unfortunately, was not presented until too late to go the rounds of the Publication Committee before the forms were closed for January.

The Council at the December meeting decided to recommend to the House of Delegates at White Sulphur a reëstablishment of the Defense Fund, and a committee was appointed to study the subject and make recommendations at the state meeting in May. Each local society should give this matter serious consideration and instruct its delegates as to the wishes of their constituents. Certain facts should be emphasized now, however:

1. The former Defense Fund was economically unsound. If all members sued in Huntington and Charleston in the last four years, to say nothing of the remainder of the state, had called upon the Fund for the full amount eligible, practically the whole balance would have been wiped out. With the increasing number of suits, neither the State Association nor the individual physician can afford to depend upon such defense, and commercial insurance is an absolute necessity.

2. When originally established, the Defense Fund was more efficacious than at present, its chief value now being the moral force it wields in preventing the filing of suits.

3. Commercial insurance now provides ample protection as to legal defense, verdicts and appeals, but not to cover the expenses of professional witnesses in attendance at court.

4. The administrative machinery of the old Fund was unwieldy and not well understood by the individual physician.

We would suggest, therefore, that, if the Defense Fund is reëstablished, these facts be given careful consideration and made the basis for the new Fund. In the meantime, we can not urge too strongly the absolute necessity of commercial malpractice insurance, whether the Defense Fund is reëstablished or not, for it does not appear practical to raise the state dues high enough to afford adequate financial protection. It seems to us that the chief functions of a State Association Defense Fund should be the moral value as to prevention of suits and to take care of the expenses of professional witnesses, leaving the financial protection against legal fees, court costs, verdicts and appeals to the commercial insurance companies.

Walter E. West

EDITORIAL

Early Diagnosis Campaign

The physicians of West Virginia are being afforded an opportunity to participate, in April, in another Early Diagnosis Campaign for the discovery of tuberculosis. In the two previous spring campaigns thousands of adults were examined and many were found to have tuberculosis or other serious defects.

Last year, attention was given to "tuberculosis in childhood." During the progress of the campaign so many interesting phases of this subject developed that it was decided to amplify the ideas more extensively in planning the 1930 program. The objective of the effort will be the protection of children from tuberculosis. This will involve a vast organization of state, county and city civic and health agencies for impressing on the public mind that tuberculosis usually begins in childhood.

The National Tuberculosis Association is preparing millions of leaflets and colored posters for distribution through its affiliated state and local associations. Magazines and newspapers will carry special announcements and display advertising. Special motion pictures and illustrated lectures will be available for both lay and medical audiences. In all of these supplies emphasis will be laid on the following four precepts to parents as a means of protecting children from tuberculosis:

Keep them away from sick people.
Insist on plenty of rest.
Train them in health habits.
Consult the doctor regularly.

For the use of physicians a pamphlet on "The Childhood Type of Tuberculosis" has been prepared by Dr. Henry D. Chadwick, with illustrated x-ray plates and diagrams furnished by Dr. F. Maurice McPhedran by the aquatone process. The subject matter is endorsed by the Committee on Childhood Tuberculosis of the American Sanatorium Association. The April issue of "Tuberculosis Abstracts" will consist of summaries of recent medical articles on childhood tuberculosis. A set of twenty-five stereopticon slides with a carefully edited lecture syllabus and a description of each slide has been designed for medical societies.

"Tuberculosis and How It May Be Avoided" is the title of a one-reel educational motion picture produced by Eastman Teaching Films under the supervision of Prof. C. E. Turner of the Massachusetts Institute of Technology. It shows the nature of the tubercle bacillus, how it is walled off in lung tissue, how the early signs of tuberculosis may be detected in children, and how a child should be protected. This film was made especially for teaching purposes in high schools. It is equally suitable for audiences of parents, nurses, and physicians.

All of this material is available without charge to any physician or medical group, on application to the West Virginia Tuberculosis and Health Association, 910 Quarrier Street, Charleston.

Physicians are needed by the state association to conduct clinics, to deliver addresses, and to hold conferences with local lay groups. Any physicians who are willing to participate in one or more of these services are invited to write to George C. Rowell, the executive secretary.

The success of the early diagnosis campaign in the past two years and the worthiness of the effort bespeak for the work this year the active support of the profession for the country-wide campaign which the National Tuberculosis Association is staging for the coming months of April and May. Renewed attention will be directed to the early symptoms of tuberculosis and to the necessity from the lay standpoint of "letting the doctor decide."

The campaign in West Virginia will be directed by Mr. George C. Rowell, executive secretary of the State Tuberculosis Association, Charleston. Mr. Rowell is especially anxious to work with and through the physicians of the state and especially the local medical societies. Any regularly licensed physician who cares to assist this movement in his home community should write to Mr. Rowell, 910 Quarrier Street, Charleston, West Virginia.

The importance of this work in the fight on tuberculosis can not be stressed too strongly. Moreover, such campaigns further another movement still in its infancy but destined to grow up and to play a great part in influencing the longevity of the individual, namely, the periodic health examination.

We commend the Early Diagnosis Campaign to the physicians of the state, for we believe it means much to both the laity and the profession.

Financial Statement

The members of the Association will be interested to know that the wind-up of business in 1929 found the Association in sound financial shape. A summary of the report of Dr. T. M. Barber, treasurer, which was given and approved at the council meeting on December 30, 1929, will be found herewith.

On that date the Association total cash deposits amounted to $6,656.43.

The report of the treasurer showed the following accounts:

General fund	$1,593.31
Medical Defense fund	2,027.32
Indigent fund	3,035.80
Total	$6,656.43

In arriving at the total cash assets of the Association, we should not lose sight of the surplus of more than three thousand dollars that has been built up during the past two years by the WEST VIRGINIA MEDICAL JOURNAL. The exact amount of this surplus can be found in the report of the secretary, who has charge of the JOURNAL investments. If the cash surrender value of the Nicholson insurance policy is considered with the JOURNAL and Association accounts, it will be found that the total assets of the Association are considerably more than ten thousand dollars.

The above financial statement was prepared on December 30, 1929. The defense fund showed a balance of $2,027.32 on that date. Since the statement was prepared the treasurer has been called upon to pay medical defense claims amounting to $625, and there are a number of other defense claims that must be settled after the disposition of suits now pending.

OBITUARY

Dr. Frank LeMoyne Hupp

Dr. Frank LeMoyne Hupp, of Wheeling, past president of the West Virginia State Medical Association, chairman of the West Virginia examining board for nurses, and the West Virginia representative of the American Society for the Study of Cancer, died at his home on the morning of December 26 after an illness of two days' duration. Death was due to cerebral hemorrhage. Dr. Hupp became ill on the morning of December 24 while driving his automobile. He was assisted home and, a short time later, lapsed into a state of coma from which he never rallied.

Dr. Hupp was a son of the late Dr. John Cox Hupp and Carolene Louise Todd Hupp, his father having been one of the best-known physicians and surgeons in northern West Virginia. Dr. Hupp was born in Wheeling on July 8, 1865. He received his elementary education in the Wheeling schools, later receiving his A.B. and A.M. degrees from Washington and Jefferson College. He received his degree in medicine at Columbia University in 1889 and began practice the same year in Wheeling. Three years ago Dr. Hupp received the degree of Doctor of Science, conferred upon him by Washington and Jefferson College before a large group of alumni and educators.

Dr. Hupp had occupied almost all of the offices in the gift of his colleagues in this state. In addition to being a past president of the West Virginia State Medical Association and the Ohio County Medical

Society, he was a member of the American Surgical Society, the Southern Surgical Society, a charter member of the American College of Surgeons and a member of its board of regents, a member of the American Urological Society, and a member of the International Society for Cancer Research and of the American Society for the Study of Cancer.

Dr. Hupp had hundreds of friends in the medical fraternity, not only in West Virginia and the United States but in Canada, England and other European countries. He had a gift for writing and his contributions to various state and national medical publications were made continuously over practically all his life. Representing, since its inception, the American Society for the Study of Cancer in West Virginia, he wrote voluminously on this subject.

Dr. Hupp spent his summers at Lake George, New York, where he occupied a beautiful spot along the shores of that body of water. He had become

almost as well known there as he was in Wheeling. His familiar figure in the medical life of the state was so well known that it will be difficult to become accustomed to the absence of one who had grown up with the history of medicine in West Virginia.

Dr. Hupp was twice married, his second wife surviving him. One daughter, Miss Elizabeth Hupp of Wheeling and New York, and one brother, Archibald Todd Hupp, Sr., two sisters, Mrs. Augusta Dickinson of Wheeling and Mrs. Amanda Harding of Washington, Pa., also survive. Funeral services were held on the afternoon on December 28 from the Hupp home and interment was made in the family lot in Greenwood cemetery, Wheeling. The pallbearers were Dr. W. S. Fulton, Dr. Andrew Wilson, Dr. W. H. McLain, Dr. John T. Thornton, Dr. D. A. MacGregor, Dr. James Cooper, Charles Sonneborn and Joseph R. Naylor.

A special meeting of the Ohio County Medical Society was called for the evening of December 27, at which time memorial services were conducted in honor of Dr. Hupp. Dr. D. A. MacGregor delivered a eulogy to the memory of the deceased with the reading of a paper prepared as a tribute from the members of the society. A resolution, prepared by a committee composed of Dr. Harry M. Hall, chairman, Dr. R. U. Drinkard and Dr. John W. Gilmore, was then offered by Dr. Drinkard and was spread upon the minutes of the meeting. The resolution follows:

"The Hand of Death, swiftly and deftly having reached out into our midst and, with a cold austerity which it is not given us to understand, seemed to have picked upon a shining mark in our ranks, has taken from us one of our most distinguished members and one whom it does not seem possible for us to give up—Dr. Frank LeMoyne Hupp. We can not at this moment appreciate the full extent of our loss, but in a dim way we know it is one of the greatest calamities which has ever been visited upon us.

"It is, therefore, with great sorrow and deep sense of loss that we, the Ohio County Medical Society, gather tonight to offer our sincere and heartfelt sympathy to the bereaved family and to extend our hope that to his wife, Doctor Elizabeth Bruyn Hupp, and his daughter, Miss Elizabeth Hupp, courage and fortitude will be given to bear up through the time of adversity and trial.

"And that this resolution and offering of condolence be subscribed in the minutes of our society and a copy of it be sent to Mrs. Elizabeth B. Hupp and to the daughter, Miss Elizabeth Hupp, and copies of it also be given to the several newspapers of our city."

Commenting editorially upon the death of Dr. Hupp, the Wheeling *News* of December 29 published the following:

"We of his own day are too close to the work of the late Dr. Frank LeMoyne Hupp properly to appreciate its worth. So much that he did will exert its greatest influence with generations yet unborn that the full value of his labors is not apparent to us. But we all do know that in his death a stalwart figure has been removed from the ranks of that great army fighting to promote the health of mankind.

"A surgeon of international reputation, Dr. Hupp not only achieved an unusual personal success in the practice of his profession, but in the wider field of disease prevention and improved methods of treatment accomplished much. He spent countless hours and a world of energy in the all-important field of cancer research, yet found time to bend his unusual ability toward the improvement of nursing and general building up of the Ohio Valley General Hospital. He was an honored member of innumerable societies of his profession, and a valued counselor in the conduct of various institutions of learning.

"Few men are blessed with the talent and capacity that belonged to Dr. Hupp. Fewer still are given the personality which prompted him to devote so much of his efforts to the welfare of others. His loss is a grievous one, indeed."

The West Virginia State Nurses' Association, of which organization Dr. Hupp was the veritable godfather as chairman of the Nurses' Examining Board, has also prepared a resolution commemorating the death of Dr. Hupp in the following language:

"The West Virginia State Nurses' Association, in addition to the family, friends and associates of Dr. Frank LeMoyne Hupp, feel singularly bereft since God in His infinite wisdom has called Dr. Hupp to his eternal home.

"Through his kindly interest and his ideals for the nursing profession he has endeared himself to us all —not only personally but professionally—and by his untiring efforts he has made a marvelous contribution to the profession of nursing in West Virginia.

"He has always been our loyal friend and benefactor—one to whom we could turn in our troubles and perplexities as well as in our joys.

"In the ten years that we have been associated we have accomplished much, and the improved

status of nursing in West Virginia will ever remain a monument to Dr. Frank LeMoyne Hupp.

"It is, therefore, with a deep sense of our loss that we, the members of the West Virginia State Nurses' Association, offer our sincere sympathy to the bereaved family and hope that the memories of such a highly esteemed and widely beloved husband and father will help them in their dark hours;

"And that this resolution and offering of condolence be subscribed in the minutes of our society, and that a copy of it be sent to Dr. Elizabeth Hupp and Miss Elizabeth Hupp."

John H. Campbell, M.D.

Dr. John H. Campbell, one of the oldest and most prominent physicians of Wheeling, succumbed at his home there, after a lingering illness, on the morning of January 5, 1930. Dr. Campbell was 78 years of age and had been a practicing physician in Wheeling for more than 50 years. He was born at Fairmont, West Virginia, on March 28, 1852, a son of the late Dr. Matthew and Margaret Axton Campbell. After receiving his degree in medicine at Jefferson Medical School, Philadelphia, he began his practice in 1881.

Dr. Campbell continued in active practice until about one year ago, when he was forced to retire, owing to injuries received in an automobile accident. For more than forty years he was a member of the surgeons' staff of the Baltimore and Ohio Railroad. He was also a member of the original staff of the North Wheeling Hospital and served in that capacity until his death. He was an honorary member of tl Ohio Valley Medical Society and had served one term as president of the West Virginia State Medical Association.

Funeral services were conducted from the home on the morning of January 8 and interment was made in the Mount Calvary cemetery, Wheeling. Dr. Campbell is survived by one daughter, Miss Martha Campbell, at home, and one son, Dr. John D. Campbell, technician at the North Wheeling Hospital.

Claude A. Latham, M.D.

Dr. Claude Aubrey Latham, 34 years old, died on the morning of January 19 at the home of his parents-in-law, Mr. and Mrs. A. W. Werninger of Huntington, following a week's illness with pneumonia. He had resided with Mr. and Mrs. Werninger since the tragic death of Mrs. Latham, the former Miss Mary Rebecca Werninger, who was killed in an automobile accident last May. Dr. Latham's parents, Mr. and Mrs. M. H. Latham, of East Liverpool, Ohio, were at the bedside when death occurred.

Dr. Latham was born at Ravenswood, West Virginia, on December 17, 1895, and received his early education there. He studied at the University of Cincinnati, but later entered West Virginia University, where he received his degree of bachelor of science. He received his medical degree from Jefferson College at Philadelphia. His studies were interrupted by a year in the army during the World War.

After serving his interneship at Grant Hospital in Columbus, Ohio, Dr. Latham located at Holden in this state, moving to Huntington in 1925. At the time of his death he was chief of staff of St. Mary's Hospital, Huntington, and a member of the Cabell County Medical Society, the Central Tri-State Medical Society, the Southern Medical Association, and the West Virginia State Medical Association.

Funeral services were held at two o'clock on the afternoon of January 21, under the direction of the Cabell County Medical Society. The Masonic fraternity conducted the services at the grave. The active pallbearers were Dr. Oscar B. Biern, Dr. R. M. Wylie, Dr. James S. Klumpp, Dr. C. G. Willis, Dr. F. C. Hodges, Dr. William Strange, Dr. J. H. Steenbergen, and Dr. W. Byrd Hunter. All members of the Cabell County Medical Society were honorary pallbearers.

Frederick William Groome, M.D.

Dr. Frederick William Groome, 46 years of age, died at his home at Elverton, Fayette county, on December 2, 1929. He had lived at Elverton for the past eight years, and, at the time of his death, he was physician to the Branch Coal and Coke Company of Elverton, the Babcock Fuel Company at Sewell, the Stone Coal Company at Nuttallburg, and was a Chesapeake and Ohio railroad surgeon.

Dr. Groome was born at Newport News, Virginia, on October 15, 1884, and was educated at the Locustdale Academy and the University of Virginia. He graduated in medicine in 1907 and began his practice at Lawton in Fayette county. On October 21, 1914, he married Courtney Ellen Brown, daughter of W. A. Brown, prominent coal operator. He was a member of the Phi Kappa Sigma fraternity.

Dr. Groome was well known throughout the southern part of West Virginia, and had been a

member of the Fayette County Medical Society for almost twenty years.

ANNOUNCEMENTS

Correction

In the official directory of members of the West Virginia State Medical Association that appeared in the January JOURNAL, the names of Dr. E. N. Miller of Huntington and Dr. G. L. Vieweg of Wheeling were unintentionally omitted. The regular directory, which has been separately published, is complete with these and other corrections.

The Schick Test

An interesting color card on the Schick test for diphtheria prevention has recently been brought out by the U. S. Standard Products Company of Woodworth, Wisconsin. The card was worked out in collaboration with Dr. Bela Schick and Dr. William Parks of the New York Department of Health. On its face is a color reproduction of nine typical reactions to the Schick test. On the reverse side is a copy of Dr. Schick's immunity test against diphtheria and of Dr. Park's directions for immunity against diphtheria.

COUNTY SOCIETY NEWS

Fayette County

The Fayette County Medical Society met Tuesday night, January 14, in the Y.M.C.A. building at Mount Hope. Dr. Claude Frazier, of Powellton, read an interesting paper entitled "Bronchopneumonia." Dr. M. C. Borman, president, outlined the policies of the society for 1930, urging that the progressive policies adopted last year be continued, and that the society take a more active part in public health matters in the county during the ensuing year.

The announcement was made by Dr. Frank Harkleroad, of Harvey, of the gift of a moving-picture apparatus, to be used for the showing of films and slides, to the society by one of its members, Dr. Gory Hogg, of Harvey. The gift was acknowledged with the deepest appreciation of the society for Dr. Hogg's generosity and interest in its progress.

Dr. Charles Ray, of Charleston, past president of the West Virginia State Medical Association and member of the editorial board of the WEST VIRGINIA MEDICAL JOURNAL, after praising the progressive spirit of the Fayette County Medical Society and acknowledging the enviable, inspiring record it made during the past year, presented the Laird Memorial Cup, offered to the society a year ago by Dr. William R. Laird of the Montgomery Clinic, Montgomery, in memory of his uncle, Dr. J. M. Laird. The cup was awarded to Dr. C. L. Woodbridge, of Montgomery, for having read the most original paper before the society during the past year. The title of the paper was "Blood Transfusion in the Septicemias."

Mr. R. L. Matthews, of Montgomery, member of the legislature, paid a high tribute to the late Dr. J. M. Laird for the outstanding human quality which he believed was his lovability.

Mr. J. W. Savage, executive secretary of the West Virginia State Medical Association, briefly stated his appreciation of the coöperation that the Fayette County Medical Society is giving to the state association and to the JOURNAL.

The following physicians were present: Drs. William Price Bittinger, Lochgelly; M. C. Borman, Montgomery; W. E. Bundy, Minden; Edward I. Davies, Montgomery; Claude Frazier, Powellton; L. G. Houser, Beckley; F. S. Harkleroad, Harvey; G. G. Hodges, Kilsythe; A. L. Hunter, Pax; E. E. Jones, Mt. Hope; William R. Laird, Montgomery; C. G. Merriam, Sun; G. A. Smith, Montgomery; J. M. Spinks, Mt. Hope; C. L. Woodbridge, Montgomery.

The following guests were present: Dr. Charles Ray, Charleston; Mr. Joe W. Savage, Charleston; Dr. D. O. Nichols, Slab Fork; and Mr. R. L. Matthews, Montgomery.

H. A. WALKUP, Secretary.

Marion County

Dr. J. E. Offner, of Fairmont, was elected president of the Marion County Medical Society at the regular December meeting, to succeed Dr. H. S. Keister, who served during the year 1929. The other officers elected at the December meeting were Dr. J. B. Clinton, vice-president; Dr. C. W. Waddell, treasurer, and Dr. Philip Johnson, reëlected secretary.

The delegates to the state meeting at White Sulphur Springs next May will be Dr. E. W. Howard, Dr. W. A. Welton, Dr. J. J. Jenkins, and Dr. Philip Johnson. The alternates will be Dr. Luther C. Davis, Dr. C. T. Francis, and Dr. A. H. Stevens.

The society agreed to show a moving-picture film at each meeting during the coming year, to be

selected from the collection ready for rental by the American College of Surgeons.

PHILIP JOHNSON, Secretary.

Tri-County Meeting

The Tri-County Medical Society, comprising Monongalia, Marion and Harrison counties, held its regular meeting at six o'clock on the evening of November 24 in the Masonic Temple at Fairmont, with the Marion County Medical Society as host. Approximately 150 persons, including the doctors and their wives, were present. During the banquet the guests were entertained by the Carl McElfresh orchestra and by Mrs. Forest Fankhauser and Lamor Satterfield, who sang several numbers, accompanied by Miss Katherine Moore.

Following the banquet the Community Players presented the third act of "Camille" for the entertainment of the ladies, while the doctors adjourned to the county court house to attend a lantern-slide lecture given by Dr. Clarence Cohn of Baltimore. His subject was "The Treatment of Cancer." At the close of this paper the doctors returned to the Masonic Temple, where the remainder of the evening was spent in dancing.

PHILIP JOHNSON, Secretary.

Kanawha County

Dr. E. Bennette Henson, of Charleston, was formally installed into the office of president of the Kanawha Medical Society at the first meeting of the year, which was held in the Public Library auditorium, Charleston, on January 6. Dr. Henson has succeeded Dr. R. H. Walker, who served during 1929. Dr. D. N. Barber has taken over his new duties as secretary, succeeding Dr. Russel Kessel.

Dr. Thomas Bess, superintendent of the Hoffman Hospital, Keyser, was the principal speaker at the January 6 meeting, presenting a most interesting paper upon the subject of "Sterilization of Mental Defectives and Criminals in West Virginia." This paper was widely discussed following its presentation. It will appear in an early issue of the WEST VIRGINIA MEDICAL JOURNAL.

The program for the January 21 meeting was opened by Mr. Arch Kreig, of Charleston, pharmacist, who talked upon the subject of "Incompatabilities." He was followed by Dr. R. B. Easley, who gave an interesting report on a case of streptococcus meningitis. The scientific program was concluded with a paper by Dr. B. H. Swint on "Vaginal Hysterectomy," accompanied by lantern slides. All three of these papers were discussed by the members present.

Under the head of new business, Mr. Joe W. Savage, state secretary, was called upon for a report on the state library and its use. After the report was made, Dr. J. Ross Hunter offered a motion that a committee of three members of the Kanawha Medical Society be appointed as a library committee, and that a sum of money, not to exceed $120, be allowed this committee to purchase and subscribe for medical journals, periodicals and books for the state medical library.

D. N. BARBER, Secretary.

Raleigh County

The regular monthly meeting of the Raleigh County Medical Society was held in the parlor of the Beckley Hotel, Beckley, at 7:30 o'clock on the evening of January 16, 1930, with sixteen members in attendance. Several items of business were acted upon, including a motion that the future meetings of the society be held on the third Thursday in each month.

Dr. A. H. Grigg, of Beckley, made a brief talk upon the importance of locating the federal Veterans' Hospital at Beckley, and explained the advantages of acquiring the hospital. He asked for the support of every member of the society in securing the hospital for Raleigh county. At the end of this discussion a motion was made, seconded and carried, that a committee of five members be appointed to assist other organizations in locating the hospital at Beckley. The committee as appointed was made up of Dr. Grigg, Dr. George Fordham, Dr. K. M. Jarrell, and Dr. A. F. Murphy.

The medical defense fund was discussed by various members, and, while there was no formal action taken, satisfaction seemed to prevail in the moral support that the fund gave to the members of the society.

A motion was made by Dr. L. G. Houser that the president, the vice-president and the secretary constitute the program committee. This motion prevailed. It was also moved and carried that the February meeting be held with a dinner, and that each member pay for his plate.

Dr. R. P. Daniel then moved that the president appoint a committee to procure a place and make arrangements for the February meeting and dinner, and also that each future meeting this year be held with a dinner and that the committee have charge of the arrangements for each meeting. This motion

prevailed, and the president, Dr. A. U. Tieche, appointed Dr. R. P. Daniel, Dr. D. D. Daniel and Dr. A. H. Grigg to serve upon this committee.

W. W. KOINER, Secretary.

Eastern Panhandle

The December meeting of the Eastern Panhandle Medical Society was featured by a dinner and dance, held at Martinsburg, with an attendance of approximately one hundred per cent. The banquet speaker was Mr. Harry Snyder, of Shepherdstown, who entertained the gathering in a thought-provoking address liberally interspersed with witticisms. Many friends of the society were invited to the dance that followed.

Dr. G. P. Morrison, of Martinsburg, was elected as president of the Eastern Panhandle Medical Society to serve during the coming year. Dr. Morrison has succeeded Dr. A. B. Eagle, whose term expired on January 1. Other newly elected officers of the society include Dr. W. E. Dodd as vice-president, and Dr. W. Ross Cameron, who was elected to succeed himself as secretary-treasurer.

The next meeting of the society will be held in Charles Town on March 12, 1930.

W. ROSS CAMERON, Secretary.

Marshall County

Dr. R. A. Ashworth, of Moundsville, was elected as president of the Marshall County Medical Society at the regular meeting which was held in the court house at Moundsville on the evening of December 10, 1930. Dr. Ashworth has succeeded Dr. B. F. Bone, whose term expired on January 1. Other officers elected at the December 10 meeting include Dr. J. H. Luikart, vice-president, and Dr. J. A. Striebich, secretary-treasurer.

Dr. B. F. Bone and Dr. W. P. Bonar were elected as delegates to the state meeting at White Sulphur Springs next May, with Dr. C. S. Fortney and Dr. Mary Fortney, of Hundred, as alternates. The scientific program was presented by Dr. W. A. Quimby, of Wheeling, who read a most excellent paper.

Dr. J. A. Striebich, of Moundsville, has been reëlected as president of the staff of the Reynolds Memorial Hospital at Glendale for the third time at the regular December staff meeting, which was held in the staff room at the hospital and which was followed by a smoker. Routine business was transacted in addition to the smoker. Dr. Striebich, who is secretary of the Marshall County Medical Society and in charge of the pediatric department of the hospital, has had two very successful terms as staff president.

Cabell County

Dr. A. K. Kessler, of Huntington, was elected as president of the Cabell County Medical Society to serve during 1930 at the regular meeting held in Huntington on the evening of December 26. Dr. Kessler has succeeded Dr. Oscar B. Biern. Other officers of the society elected at the December 26 meeting were Dr. C. G. Willis, vice-president; Dr. R. M. Sloan, secretary, and Dr. R. M. Bobbitt, treasurer.

The delegates to the state meeting at White Sulphur Springs next May will be Dr. L. T. Vinson, Dr. R. M. Bobbitt, Dr. F. C. Hodges, Dr. J. A. Guthrie, and Dr. R. M. Sloan. Alternates will be Dr. W. C. Swann, Dr. J. D. Cronin, Dr. William W. Strange, and Dr. D. G. Johnson.

Dr. Kessler was officially installed as president at the January 9 meeting, which was held at the Hotel Prichard. The speaker of the evening was Dr. R. A. Keilty, of Washington, D. C., who gave a most instructive talk on "Vaccine Therapy." There were about forty-five members present. Many of them took part in the discussion of the paper, and the program was enjoyed by all.

The Cabell County Medical Society is making a special effort this year to secure every eligible physician in the county as a member, and to make the programs so interesting that they can not be missed. The society has reported the resignation of Dr. B. H. Denman, who has moved to Houston, Texas, and of Dr. B. L. Hume, who has moved to Mentor, Ohio.

R. M. SLOAN, Secretary.

Ohio County

Dr. R. J. Snider, of Wheeling, and Dr. James E. Monger, of Columbus, Ohio, furnished the scientific program for the January 10 meeting of the Ohio County Medical Society, which was held in the Wheeling Elks' Club. Dr. Snider presented a paper on "Tetanus," while Dr. Monger's subject was "Rabies," illustrated with lantern slides. Both papers were thrown open for general discussion.

The Ohio County Medical Society has announced the following new members, all of whom were taken in with the beginning of the new year:

Dr. Joe R. Arnold, Dr. Russell C. Bond, Dr. James L. Cowl, Dr. Robert W. Lukens, Dr. Lorne A. Lyon, Dr. John W. Marsh, Dr. Arthur L. Osterman, Dr. Howard R. Sauder, and Dr. Andrew Wilson.

H. W. BOND, Secretary.

Mingo County

Dr. G. B. Irvine, of Williamson, was elected to serve during 1930 as president of the Mingo County Medical Society, at a meeting held at Williamson on the evening of December 12. Dr. Irvine has succeeded Dr. W. H. Burgess, whose term expired on January first. Other officers elected at the December 12 meeting included Dr. Thomas D. Burgess, vice-president, and Dr. Fred Ben Quincy, reëlected as secretary-treasurer. The new board of censors is composed of Dr. George W. Easley, Dr. R. A. Salton, and Dr. Frank Mosley.

FRED BEN QUINCY, Secretary.

Hancock County

A highly interesting meeting of the Hancock County Medical Society was held in the emergency hospital of the Weirton Steel Company, Weirton, on the evening of January 6, 1930, with an excellent attendance. The scientific program was presented by Dr. R. B. Bailey and Dr. W. M. Sheppe, of Wheeling. Dr. Bailey presented a paper, accompanied by lantern slides, on "Mediastinitis and Mediastinal Tumors." Dr. Sheppe discussed the treatment of the conditions presented by Dr. Bailey.

F. B. HARRINGTON, Secretary.

Lewis County

Dr. W. H. Greene, of Weston, was elected as president of the Lewis County Medical Society at the regular meeting held at the M. P. Church in Weston on the evening of December 10. Dr. Greene will succeed Dr. George Snyder, who served during the year 1929. Other officers include Dr. W. T. Smith, of Glenville, vice-president, and Dr. O. L. Hudkins, of Weston, secretary-treasurer. Delegates to the state meeting will be Dr. George Snyder, Dr. M. D. Cure, and Dr. O. L. Hudkins. Alternates will be Dr. S. H. Burton and Dr. E. T. W. Hall. Dr. D. P. Kessler, of Weston, was elected as councillor.

The December 10 meeting was featured with an old-fashioned turkey dinner served by the ladies of the church. This meeting was designated as "Ladies' Night" and there was an attendance of 35 persons.

The scientific program was presented by Dr. B. I. Golden, of Elkins, who gave a most interesting paper on "Chronic Infections of the Gallbladder," and by Dr. Thomas Bess, of Keyser, who presented an excellent paper on "Sinus Infections." Both papers were especially good and the discussion that followed showed that they were highly appreciated by the members of the society.

O. L. HUDKINS, Secretary.

Central Tri-State

The annual winter meeting of the Central Tri-State Medical Society, one of the most successful in the history of the society, was held at the Hotel Prichard, Huntington, on the afternoon and evening of January 23, 1930. In spite of adverse weather conditions there was an excellent attendance at both the scientific meeting and the banquet.

The scientific program was opened by Dr. Louis G. Martin, of Hot Springs, Arkansas, who gave a most interesting paper on "A Few Conclusions After the Observation and Treatment of 15,000 Cases of Syphilis." Dr. Martin was followed by Dr. George Heuer, professor of surgery at the University of Cincinnati, who read a splendid paper on "Errors in the Diagnosis and Treatment of the Commoner Acute Abdominal Conditions." The afternoon program was concluded by Dr. Charles Geschlickter, chief of the surgical-pathological laboratory of Johns Hopkins, Baltimore. Dr. Geschlickter presented the paper of Dr. Joseph C. Bloodgood, of Baltimore, on "The Present Status of Cancer Research," of which paper he was a collaborator.

Following the evening banquet at the Prichard, Dr. Park G. Smith, of Cincinnati, concluded the meeting with a most interesting paper on "Coccus Infection of the Kidneys." All of the papers were discussed by the members in attendance.

Central West Virginia

The Central West Virginia Medical Society held its first meeting of the new year at Sutton on January 22. A delightful banquet was served to the twenty-four persons present by the ladies' bible class of the Southern Methodist Church.

The scientific program immediately followed the banquet. Dr. R. J. Vassar, of Sutton, read a very instructive paper on "Lesions of the Soft Tissues of the Mouth." Dr. E. Bennette Henson, of Charleston, gave an interesting talk and demonstration with chalk and blackboard on "Symptoms and Treatment

of Derangement of the Knee Joint." Dr. R. E. Luebbers, head of the department of finance of Wesleyan College, gave a very instructive as well as amusing talk on "Pitfalls of the Investor."

Those present were: Dr. J. A. Rusmisell, president; Dr. R. E. Luebbers, Dr. E. Bennette Henson, Dr. Hugh Dunn, Dr. A. L. Jensen, Dr. Charles Jurgens, Dr. E. S. Frame, Dr. and Mrs. Clyde McNeil, Dr. and Mrs. O. O. Eakle, Dr. and Mrs. J. W. Smith, Dr. and Mrs. H. S. Brown, Dr. and Mrs. M. T. Morrison, Dr. and Mrs. R. J. Vassar, Dr. and Mrs. C. C. Carson, Dr. W. H. McCauley and Miss Alma McCauley.

C. C. CARSON, Secretary.

Logan County

Dr. T. J. Ferrell, of Chapmanville, was elected president of the Logan County Medical Society at the regular monthly meeting held at the Aracoma Hotel, Logan, on the evening of January 22, 1930. Dr. Ferrell will succeed Dr. C. A. Martin, of Amherstdale, who served during the year 1929. Other officers elected at the January 22 meeting were Dr. V. E. Holcombe, of Logan, vice-president, and Dr. C. A. Davis, of Logan, secretary-treasurer.

Delegates to the state meeting at White Sulphur Springs next May will be Dr. S. B. Lawson of Logan, Dr. W. H. Parker of Braeholm, and Dr. C. A. Davis of Logan. Alternates will be Dr. F. E. Brammer, of Dehue, and Dr. R. W. Roberts, of Man. There was no scientific program at the January 22 meeting, the evening being given over to business matters. A letter from Dr. C. A. Ray, concerning the medical defense fund, was read by the secretary and discussed. It was then moved and carried that the newly elected delegates take the matter in full charge and act for the society.

C. A. DAVIS, Secretary.

Monongalia County

The regular meeting of the Monongalia County Medical Society was held in the Junior High School library at Morgantown on the evening of January 7, 1930, with an excellent attendance. The scientific program was furnished by Dr. John D. Sturgeon, of Uniontown, Pennsylvania, who read a most interesting paper on "Infant Feeding." This paper was widely discussed by the members present.

G. R. MAXWELL, Secretary.

PUBLIC HEALTH

T. B. Executives Meet

A meeting of the executive committee of the West Virginia Tuberculosis and Health Association was held January 6, 1930, at the state headquarters in Charleston. The members present were Frank Townsend, Parkersburg; Walter E. Vest, M.D., Huntington; Dent A. Taylor, Wheeling; G. H. Barksdale, M.D., and Walter McNeal, Charleston; Mrs. S. M. Kendall, Elkins; Mrs. S. W. Price, Scarbro, and George C. Rowell, executive secretary.

Plans were considered for coöperating with the National Tuberculosis Association in carrying out the program of the 1930 early diagnosis campaign throughout the state during April and May. It was decided to feature chest clinics in as many counties as possible during that period in connection with the showing of a special motion picture, the display of posters and the distribution of special literature devoted to the subject of tuberculosis in childhood.

A committee, composed of Dr. Vest, Dr. Barksdale and Mr. Townsend, was appointed to prepare a program for the annual meeting of the state association, to be held in Huntington during the second week in June.

Tributes in memory of the character and activities of Dr. John G. Pettit, the president, who died December 20, and Mrs. James B. Moran, the recording secretary of the state association, who died October 24, were acknowledged in resolutions adopted by the committee.

Summary of Health Conditions

A summary of health conditions in the United States during the past fiscal year is included in a report recently submitted to Congress by Surgeon General H. S. Cumming of the Public Health Service. This report indicates that bubonic plague was reported in California and the island of Hawaii during the fiscal year.

Preliminary reports show that the birth rate in the United States birth registration area for the calendar year 1928 was lower than in 1927, while the death rate was higher. The figures for births were: 1927, 20.7 per 1,000; 1928, 19.7 per 1,000; for deaths, 1927, 11.4 per 1,000; 1928, 12.1 per 1,000. The infant mortality rate for 1928, 67.9 per 1,000 births, was higher than in 1927, 64.6 per 1,000 births.

The outbreak of influenza, which began in the spring of 1928, decreased as usual during the sum-

mer months and flared up into epidemic proportions during the fall of 1928, was responsible for much, if not all, of the increase in the death rate for the calendar year 1928. In the fall the epidemic was first reported on the Pacific Coast and then spread rapidly eastward, reaching its peak for the country as a whole about the first of the year 1929.

The disease in many parts of the country was so mild that physicians hesitated to report it as influenza, and many cases were considered to be merely severe colds and were not treated by physicians. However, the general death rate rose far above normal during the epidemic, which did not continue for many weeks in any one place.

Surveys conducted by the Public Health Service in certain states concerning the influenza epidemic of 1928-29 showed that nearly 15 per cent of the population canvassed in various localities gave a history of having suffered attacks of influenza or grippe, while 0.47 per cent gave a history of pneumonia and an additional 14 per cent reported colds which may or may not have been directly related to the epidemic.

During the calendar year 1928, 38,000 cases of smallpox were reported in the United States; in 1927, 35,000 cases were reported. It seems strange that, year after year, more cases of smallpox are reported in the United States than in any other country of the world except British India; yet this disease can be controlled by vaccination and revaccination and, with the coöperation of the public, could be stamped out in the course of a few years.

More cases of cerebrospinal meningitis were reported during 1928 than have been reported since 1918. This disease appears to increase and decrease in swells of several years' duration, and for the last five years it has been increasing.

The record for the calendar year 1928 shows a new low death rate for typhoid fever. This disease was responsible for 34 deaths per 100,000 population at the beginning of the present century. The mortality has decreased until, in 1928, forty-three states reported only 5,425 deaths, giving a death rate of 4.8 per 100,000. This reduction of 86 per cent in the death rate from typhoid fever has been brought about largely through the practical application of the principles of modern sanitary science. Health officers and others interested in sanitation who have had a part in this work may well be proud of the results accomplished.

Tuberculosis, which has been decreasing since the beginning of the century, when comparable annual records of deaths were first published, showed, during the year 1928, the lowest general death rate ever recorded by the Public Health Service for that disease. The death rate for 1928 was 77.5 per 100,000 population. In 1900, in the death registration area, the death rate from tuberculosis was more than 200 per 100,000.

The number of deaths from pellagra in forty-three states increased from 4,794 in 1926 to 6,652 in 1928. The death rates range for 1928 from 50 per 100,000 in South Carolina and 42 in Mississippi to less than one-tenth of one per 100,000 in several states. The disease is more prevalent in rural districts than it is in the cities, and southern states have higher rates than northern states.

Incomplete reports show that undulant fever is much more prevalent in the United States than has been realized. Reports from many sources, some of them not official, show that there were at least 649 recognized cases of undulant fever in the United States in 1928. Four hundred and eighty cases of tularemia with eight deaths were officially reported to the Public Health Service for the year 1928. Many cases of this disease are not reported.

Typhus fever is another disease for which the reports are incomplete. The mild form of this disease (sometimes called Brill's disease) was prevalent during 1928, especially in the southeastern states. One hundred and forty-three cases, with twelve deaths, were reported to the Public Health Service.

Study of Leprosy

The Public Health Service has recently issued a report (Public Health Bulletin No. 189) on leprosy from the leprosy station of the Service in Hawaii that is of interest to all and should be of special value to physicians who are interested in diseases of the skin and of the nervous system. This report points out that leprosy is by no means always the repulsive condition that it is traditionally regarded as being, but that often the signs and symptoms are so slight or so indefinite that there is required great discrimination upon the part of the physician, and perhaps he may require repeated examinations before coming to a decision in some cases. The microscope is often of value in making a diagnosis.

The general public is accustomed to regard leprosy as abhorrent in every respect; whereas, in fact, many lepers might mingle with the public without attracting the slightest attention. The Public Health Service study is based upon the minute investigation

of 250 cases by experts, and it is emphasized that the onset is usually insidious and that perhaps two years on an average will elapse before the patient is admitted to a hospital. A point of interest is seen in the long periods of quiescence of the disease during which the victim is apparently free from any signs of the infection.

The report concludes by comparing certain features of leprosy with tuberculosis, and the suggestion is made that means of handling the disease similar to those that have been successful in tuberculosis may prove of value. Perhaps, to the layman, the most striking feature of the report is the information that spontaneous arrest of the disease, of greater or less duration, is a common occurrence.

Undulant Fever

Goats, pigs, sheep and cattle are known to suffer from infections with closely related bacteria which belong to the genus *Brucella*. The general name *Brucelliasis* is therefore given to all of these infections. While each of these kinds of animals is commonly infected with its own strain, it sometimes happens that one kind may be infected with the strain characteristic of one of the other species.

Human beings may acquire these infections from the quadrupeds mentioned, either by direct contact in caring for or slaughtering them and dressing their carcasses. There is good reason for believing that some cases are due to drinking the milk of infected animals.

The prevalence of these infections of persons differs greatly in different parts of the world, as does also the prevailing source of the infection. For example, in the Mediterranean area, human infection with the goat disease is common, and is known as Mediterranean or Malta fever. While there have been cases and outbreaks of goat infection in the United States, it is not at present the prevailing type.

The figures are as yet too incomplete to enable us to state with confidence the strain of the germ responsible for the common human brucelliasis in the United States. Inasmuch as cows are sometimes infected with the porcine strain, they may be the immediate means of conveying this type of infection to man.

These infections in man could properly be called brucelliasis as they are in the animals, but on account of one fairly common characteristic the disease is commonly called undulant fever when it occurs in man, due to the undulating or wavelike up-and-down course of the fever and other symptoms. One attack follows another with intervals of relative freedom. The death rate of this disease is not high, but the degree of disability caused in the individual is often great. Sometimes the infection consists of only a single attack, but in other cases it clears up permanently only after several years of greater or less suffering and disability. Up to the present time no specific treatment or cure has been discovered.

Studies are now being conducted to determine the sources of the infections. These apparently differ in different areas. In some, the cases are mostly traceable to caring for pigs or cattle or handling their carcasses. In others, the chief source apparently has been drinking the milk of cows from infected herds.

Preventive measures must include an attempt to eradicate the disease from hogs and cattle, and, pending the accomplishment of this result, measures to protect persons from infection while handling animals or their carcasses, and measures to prevent milk transmission.

While it may be possible, under favorable conditions, to eradicate the disease from a given herd within a few years, it is foreseen that the general elimination of the disease from the cattle and hog population throughout the country will be a slow process. In the meantime, we have in pasteurization an effective means of avoiding infection through milk.

Undulant fever is not so prevalent as to constitute a major health problem. There is no cause for undue excitement. Nevertheless, there are far more cases than were recognized a few years ago, and it is well to take such precautions as may reasonably be observed. As concerns the pasteurization of milk, undulant fever is only another reason added to equally important ones for protecting the public by employing this measure as regards the great bulk of market milk. The Public Health Service maintains that milk should be produced and handled under strict sanitary precautions before it is pasteurized.

Monkey Parasites

The U. S. Public Health Service has issued as Hygienic Laboratory Bulletin 152, a technical publication on the classification of monkeys and of their diseases in relation to the diseases of man. This bulletin was prepared by Prof. C. W. Stiles, of the U. S. Public Health Service, and Dr. Albert Hassall, of the U. S. Bureau of Animal Industry. Monkeys have many diseases that occur in man, and on this account they are more and more becoming objects of scientific study in public health laboratories; but

public health investigators have heretofore lacked a convenient classification which would assist authors in the identification of these mammals and their diseases, such as is presented in this bulletin.

With the increasing knowledge of the diseases which can develop in monkeys, questions of public health importance arise in regard to the potential rôle of the menagerie, the circus and the zoo in spreading diseases to man. Hygienic Laboratory Bulletin 152 gives the desired information in regard to the apes, monkeys and lemurs, for under each animal cited there is a list of its parasitic diseases, and in the introduction under the name of each parasite there is a list of all the apes, monkeys and lemurs for which each particular parasite has been reported and a notation whether the parasite is transmissible to man.

It is interesting to note that two of the hookworms reported for man are reported for apes also, and that two infections ("tongue worms") which man contracts from snakes are very widespread among the apes and monkeys.

This publication will be of interest chiefly to anatomists, bacteriologists and zoölogists, and can be obtained by applying to the Surgeon General, U. S. Public Health Service, Washington, D. C.

THE LAY PRESS

"Obnoxious" Truth

Eddyism—at least official Eddyism—has been strangely moved by the appearance of a *Life of Mrs. Eddy*, written by Edwin Franden Dakin and published by Charles Scribner's Sons, of this city.

The book, which was recently and favorably reviewed in *The Christian Advocate*, was not submitted to the censorship of the Mother Church. But it is a straightforward, apparently unbiased record of well-attested facts regarding the life of the remarkable woman whose lengthened shadow still lies across the world in the form of the notable religious body of which she was the founder, sage, prophet, and high priest. Nevertheless, the Christian Science Church authorities have set all their powerful machinery in motion to limit and counteract the truth which Dr. Dakin offers. They threatened the Scribner firm with the same financial fate which overtook another New York publisher (McClure) a generation ago because he dared issue an "obnoxious" book. When the publisher bravely asserted the freedom of the press, he found himself subjected to an insidious variety of persecution known as the indirect approach. Retail booksellers all over the country began cancelling orders and withdrawing the Dakin volume from their shop-windows and showcases. This has been done, not because the book contains falsehoods, but because at important points it interferes with the official story. The Christian Science by-laws provide for the establishment of an Intelligence Committee on the subject, in every large city, whose business it is to put the screws on every periodical which prints "obnoxious" matter. This is done through the boycott. That it is done with Scientist thoroughness no victim can deny. Booksellers from all over the country have been notifying the publishers that they can not sell their book or exhibit it for sale. The only reason is that the Christian Science Church does not want it sold and will use direct action to stop its sale. Outside New York City 70 per cent of the booksellers have been compelled to reject the book. It is not an impure book. It is not even an attack on any church. It is a plain statement of things believed to be facts, together with the supporting testimony. Yet the church whose alleged watchword is "Love" is sparing no effort to prevent its being read.

The courageous fight of the Scribner firm to protect itself and the public is as praiseworthy as the tactics of the Christian Science organization are contemptible. Suppose the Methodists, who outnumber the Christian Scientists at least 50 to 1, should proclaim a boycott against the book and periodical publishers who habitually defame their church. What a chorus of condemnation would be heard! "Narrow," "intolerant," "bigoted"—these would be mild epithets. Yet the provocation in the Methodist case is far more serious. The only difference is that the Methodists are ready to meet their opponents in the open and fight them with their own weapons, while the Eddyites rely on the gag and lethal gas.—*The Christian Advocate.*

Nathan's "Oh, Doctor!"

George Jean Nathan, who with H. L. Mencken and O. O. McIntyre were appointed by something or somebody as three court jesters at the foot of the throne of American Respectability, has answered the call of *Vanity Fair* for January and written what he no doubt thinks is a hot article, entitled "Oh, Doctor!" A celebrated book character once said that fleas were necessary to a dog to let him know he was a dog, and George Jean feels he has the same destiny in showing us why we behave like human beings. George Jean Nathan generally speaks with

an air of authority, but the chances are you will like a show he does not and very often a book he states is not worth a street-car token will give you a pleasant evening. The three acid throwers named above pride themselves on penetrating deeply, in their self-appointed function as human gadflies, upon the flanks of the equestrian statute of civilization, and biting good and hard until it hurts. "Giving until it hurts" is reminiscent of Liberty bonds and the World War, but these three fellows use the motto every day. They no doubt do a lot of good, and their excursions against the back-slappers and "yes men" are highly diverting at times. They are like the tests for sensitization in the detection of asthma, and if they make you very angry the chances are you are having a little personal primrose around the house that you had better be rid of right away. No doubt, in many instances, they act like one of these dirt strainers on an automobile and keep a lot of hokum from going through that would clog the works.

It is true you can probably hire them to write a magazine article against anything, like you can procure a couple of gangsters to knock off any one you don't like; but the world is just like that, and if one of these three Knights of the Sacred Order of Tabasco Sauce can't accommodate you, one of the others will.

But at that they can't possibly know about everything, even if they have seemed to act as if they did. They are very wise, of course, and maybe they don't know it. So George, in *Vanity Fair*, feels he knows a whole lot about doctors. When you read "Oh, Doctor!" you gather the same impression you would after hearing some old colored mammy relate her miseries and what liniments she had used, 'way down south and some thirty miles west of the water tower. There is a terrible feeling comes over you that perhaps George doesn't altogether know everything about life after all. Far be it from George to do any plagiarizing, but the article is very similar to one in *The American* recently. The observations, although founded on personal experience, are quite sale, and it looks like *Vanity Fair* was "hooked" in regard to the novelty they boast about.

According to Jean, he had an awful time of it. We have heard of patients having a lot of bad luck with their doctors, but Jean had more than his share. Much more. In fact, he didn't seem to be any more fortunate than some people were in the recent stock market; and he had so much wrong with him, too. George really harkened back to Job in the list of his afflictions. George, instead of having the pain in the neck some of us get when we read what he writes, has a pain in his left eye. Since we learn of this we forgive him for some of the things he has written. He has seen seventy-one doctors all told by actual count and he still has it. Next he gets a "cold." George has never read the free confession made when we were a student that it is self-limited, so he goes on to say he gets along as well, if not better, if he sees no doctor than if he does. He says doctors do not confess when they do not know a thing. The three court jesters are great for confessing, you know. He says, "With the old ten-dollar fee in sight, they (the doctors) mask a guessing contest as a science."

Mr. Nathan has a friend. Everybody always has a friend or a friend who had a friend who had a friend. Mr. Nathan's friend had hay fever thirty years. Just think of it—thirty years!. George has another friend. We are always glad to learn any man has two friends. One is a pretty big luxury. Friend number two had an earache. Would you believe it?—not a single doctor did a bit of good for it! Finally, George states, "he kicked the last doctor out," put a piece of ice in front of his ear, and got well. God help this man! What if he had nothing in the house but an electric refrigerator and the cube department was out of order?

George Jean now makes a kick about the way we tell people little outgrown platitudes and everyday facts. In this he comes pretty close to being right. We have our own selves to blame here, and for handing it to us on this George Jean Nathan redeems himself. The overscientific gentleman who believes he was employed for a diagnosis only has brought us to where we are vulnerable to this criticism and George Jean Nathan does not overlook the opportunity. Next the family doctor comes in for it. Who could write a layman's medical article without slamming the country doctor? George is novel in nothing in this analysis.

Tonsils are pitched into the fray and the dogs of criticism snap them up. "Drinking water" and "exercise" are converted into flat tires. In addition to having a pain over the left eye, our merry jester also had one in his back. Did the doctors help it? No, they did not. Finally, he met an athletic trainer who told him he was sitting on a cushion—a soft cushion. George threw it away. Got well. There you are. Next time you get a patient with a backache running up and down his whole back, tell him

to cast his Simmons bed in the rubbish heap and try a couple of ten-inch boards.

George, in addition to having two friends, had an uncle. Pain in his tongue eight years. The rounds of the doctors again. Ah, but there was a German bartender in Philadelphia who told him to take a half teaspoonful of salt in a half glass of water six—not five—times a day. Wash his mouth out. Result: no more pain in the tongue.

We have seen George Jean's name in about every periodical but *Physical Culture*, so we advise him to send his next medical manuscript in to them and see if he can't get a wider circulation. *Vanity Fair* is so exclusive.

It is a dreary picture he draws, and he handles the medical profession as if they were a species of Chicago gangster. He throws the usual sop that all these literary fellows do, by saying the Dicks and others have done a little that was all right. Thanks for these few words, Mr. Nathan. We believe it is necessary to have destructive criticism. We believe it is even necessary to pick out a few outstanding defeats and parade them around as if they were all the animals the big show had to offer. Nothing can progress without a few good, swift blows in the region of the solar plexus to try its mettle for any big fight.

McIntyre, Mencken, Nathan and Company are the best firm of auditors we know of, but really they don't know everything. George's pain in the eye may be recalcitrant, but oh, how many cases of *tic douloureux* have been saved from a living hell. Pains in the eye are often debatable, George. "Colds," yes. Twenty-some microörganisms in the mouth. Just how many are invited to a coryza party and which ones go is not an easy matter to determine. Some go in the front door; others in the back. The butler does not get all their names. Patience, George.

As to the "hay fever," blame that on the Lord. In "Is Sex Necessary?" there is a young man who turned down a girl, otherwise perfect, because she said "Howdy." He couldn't stand it. Some people won't stand the ragweed which is inarticulately saying "Howdy" by way of a little pollen. Is it clear now?

In all the range of human beings—no exceptions—there is not a class which comes any way near confessing their mistakes like medical men. See reports of the Massachusetts General Hospital issued on blue and white sheets.

The soft cushion requires very little in the way of an answer. The next man might want a rubber ring. The salt water belongs to the class of literature—maritime, isn't it?—of which "Cradle of the Deep" was an example. Wonderful, and no doubt true—but extraordinary; very extraordinary. Page Miss Crawford.

Now, a doctor has no business reading *Vanity Fair*. What with cubist pictures; snappy yet very highbrow articles; what colored neckties go with tan overshoes; advice as to not wearing a monocle with a polo costume or spats with a bathing suit; no capitals in the reading matter, it is too big an effort for the common garden variety of doctor.

But, George, take your hard-luck story and compare it with the mighty attainments of the medical profession and see what your reaction is. It is like taking *Mother Goose* and placing it as a guide to the reading of Plato or the understanding of Hamlet. Did you ever stop to think that probably, as you are very nervous about so much that goes on in the world, you are hypersensitive? The pain lingers, if not the taste. With a keen perception such as authors like you necessarily have the genius that is in you may enlarge on pain like it does on the great American comedy.

Each man's pain is his own business, and no one can make him part with it but 71 doctors is a big order and the statistics show that out of the 57 varieties one ought to get some one in all that lot to fit the peculiarities of the case, and to get the same deal shuffled out again about your back is, to say the least, unusual. Either George Jean Nathan is not made for the doctors or else the doctors are not made for George Jean Nathan. His uncle had the same trouble getting fitted with a doctor, so maybe it is hereditary in the Nathan family. It mus be contagious, too, because his friends also have maladies the doctor can't master. Other people find medical men more or less efficient despite the guessing contests which they call a science.

Oh, George Jean Nathan, we have read you on and off for many years, and never did we suspect that you or any one else would try the same thing seventy-one times. Come, now; are you sure it was seventy-one?

H. M. H.

MEDICO-LEGAL

Insurance: Loss of Eye

The appellant agreed to indemnify the appellee against the loss of an eye "by removal of the eyeball from the body." As the result of an injury, the

appellee lost, totally and permanently, the sight in her right eye; but the eyeball was not removed. The trial court decided that she was not entitled to the agreed indemnity, but the court of civil appeals for the second district (Texas) reversed that judgment and rendered a judgment in her favor. 8 S. W. (2d) 679. On the recommendation of the commission of appeals, however, the judgment of the court of civil appeals was reversed and the judgment of the trial court affirmed. The parties to the contract having by clear and unambiguous language provided for indemnity for loss of an eye by removal of the eyeball from the body, the loss of an eye or of its use by any other means or from any other cause can not, in the absence of grounds for equity jurisdiction, be treated by courts as coming within the terms of the contract. To do so would be to make a contract for the parties which they themselves did not see fit to make. *Sextet Local Mutual Aid Assn.* v. *Covington, et al* (Texas), 15 S. W. (2d) 614.—*Journal A. M. A.*

Rights of Expert Witnesses

The defendant, charged with statutory rape, offered evidence to prove acts of the prosecuting witness showing sexual perversion and lascivious conduct, inclusive of exposure of her person to schoolboys. This evidence was excluded. On appeal, the supreme court of Michigan held that its exclusion was error. It should have been received, not in extenuation of rape, but because of its bearing on the determination of the weight to be given the testimony of the prosecuting witness. The question was whether her mind was so warped by sexual contemplation and desires as to lead her to accept the imagined as real, or to fabricate a claimed sexual experience. Two medical practitioners, who had observed the prosecuting witness, were called by the defendant, and in answer to hypothetical questions they expressed the opinion that she was a pathologic falsifier, a nymphomaniac, and a sexual pervert. This testimony was admitted without objection and was for the jury to consider. It was error, said the supreme court, for the trial court to refer to these witnesses, in the charge to the jury, as "so-called" experts; the prefix "so-called" should not have been employed. It was error, too, to exclude these experts from the court room when the other witnesses were excluded. These experts were in attendance to give opinion evidence only. They knew nothing concerning the facts at issue, and it would have been helpful to them to be permitted to observe the demeanor and mental manifestations of the prosecuting witness in the court room. The prosecuting attorney committed prejudicial error when he held up to ridicule and scorn the two medical practitioners who had appeared as expert witnesses for the defendant, describing them as follows:

"I don't believe there was ever a more disreputable thing seen—I don't think there was anything more disreputable pulled off in a court of justice, than was pulled off by these two doctors.

"Now, I would say, gentlemen, if these two doctors were to put on a stunt like that in a vaudeville show, they would go over big. They would get a big laugh. Dr. ——, sitting in the chair there, reminds me of an advertisement you have probably all seen. Mr. —— is his attorney, and he had testified for Mr. —— several times, quite often. You have seen the advertisement of the Victor phonograph, a little dog with his head cocked on one side, listening to one of those old-fashioned, large-horn phonographs; under, it says, 'His Master's Voice.'

"Now, gentlemen of the jury, we all pay taxes for universities, and they turn out things like that. I ask you, gentlemen, what chance a girl has to defend herself against such testimony. And I tell (you) that those two doctors are worse than the Indian medicine men or negro voodoos. How any professional man can so prostitute his profession and come in here and swear to such statements as that in a court of justice is beyond me."

The prosecuting attorney had a right to analyze the testimony, to urge the jury, on reason existing in the case, to reject it, and to point out, if possible, its inapplicability. But invective ridicule, injection of his belief, and innuendoes were not proper argument and were unfair to the experts and prejudicial to the defendant.

It was improper, moreover, for the prosecuting attorney to say that, while the court fixes the amount to be paid to expert witnesses, "that don't prevent you from paying whatever you want to. . . . There is no penalty if you pay more than the court allows." That was a misstatement of the law. Section 12557, C. L. 1915, makes it a contempt of court for any expert witness to receive, or for any person to pay, directly or indirectly, to such a witness, in excess of ordinary witness fees, a sum larger than that authorized by the court. The inference to be drawn by the jury from the statement made by the prosecuting attorney in this case was transparent and could not be countenanced. The

conviction, because of the errors stated and one other, was reversed and a new trial granted.—*Journal A. M. A.*

Infection Following Use of Depilatory: Liability

The plaintiff applied to her skin, under and adjacent to her armpits, a depilatory called "Neet," which she had purchased from the defendant. Soon thereafter she felt severe pain in her armpits and arms, and later pimples, boils and abscesses appeared. After a verdict for the defendant, the court granted the plaintiff a new trial, conceiving that it had erred in instructing the jury: "If you find and believe from the evidence that plaintiff's injuries, if any, were caused by infection after Neet was used by the plaintiff in her armpits, and that such infection came from some other source than from Neet, then your verdict must be in favor of the defendant." From the order for a new trial, the defendant appealed. The plaintiff urged that Neet might have been the cause of the infection, even though it was not the source, and that the defendant was liable regardless of the source of the infection if it was the probable result of the application. The St. Louis court of appeals, Missouri, however, held that the distinction was without any real difference; it therefore reversed the order of the trial court for a new trial and remanded the case with direction to enter a judgment in accordance with the verdict of the jury. *Ansel* v. *Hannibal Pharmacal Company* (Missouri), 15 S. W. (2d) 375.—*Journal A. M. A.*

HOSPITAL NEWS

St. Mary's Opening

The official opening of the new $225,000 addition to the St. Mary's Hospital in Huntington will be held on the afternoon and evening of February 5. The lay public is invited to attend the opening and inspect the new addition from ten o'clock A.M. to five o'clock P.M. Following the public inspection, the formal opening for the profession will be featured by a banquet at the hospital at 6:30 o'clock on the evening of February 5.

Bishop J. J. Swint, of Wheeling, will be present for the ceremonies incident to the opening, and will speak at the banquet that evening. The banquet toastmaster will be Dr. R. M. Bobbitt of Huntington. Among the list of speakers will be Dr. Walter E. Vest, president of the West Virginia State Medical Association; Dr. A. K. Kessler, president of the Cabell County Medical Society; Mr. H. M. Brown, of Huntington, chairman of the hospital building committee; Dr. W. S. Rosenheim, secretary of the Huntington Chamber of Commerce, and the Right Reverend Monsignor Altmeyer, pastor of the St. Joseph's Church in Huntington.

The St. Mary's hospital addition is practically completed at the present time, and will be ready for the formal opening on February 5. The new unit is modern in every detail and will add 50 beds to the hospital, with facilities for more.

Special Hospital Number

A special Hospital Number of the WEST VIRGINIA MEDICAL JOURNAL will be published next month, it has just been announced by the publication board. The March issue, in addition to being designated as the Hospital Number, will carry all of the papers presented at the state hospital meeting in Charleston on December 2, 1929. These papers, with several case reports, will comprise the scientific section of the JOURNAL.

Hospital heads and superintendents are urged herewith to send in any news items concerning their institutions. Such news items may concern staff meetings, hospital bulletins or publications, recent improvements or future plane. In case of recent hospital construction work, the JOURNAL will be glad to use photographs showing the new additions, provided the hospital itself will bear the expense of having a cut made from the photograph.

GENERAL NEWS

Council Meeting Minutes

The annual year-end council meeting of the West Virginia State Medical Association was held in the executive offices at Charleston on the morning of December 30, 1929, with Chairman R. H. Dunn presiding. Councillors present were: Dr. Dunn, Dr. H. G. Steele, Dr. Roy Ben Miller, Dr. C. H. Maxwell, Dr. C. H. Hall, Dr. Walter E. Vest, Dr. C. G. Morgan, Dr. C. W. Waddell. Others present were Dr. Harry M. Hall, president of the West Virginia State Medical Association; Mr. Joe W. Savage, executive secretary; Dr. T. M. Barber, treasurer; Dr. C. A. Ray, Dr. C. C. Carson, Dr. R. M. Sloan, and Dr. B. S. Rankin.

The first order of business was the reading of the minutes of the last meeting, by Mr. Savage. The minutes were approved as read.

Mr. Savage then made his report upon the activities and finances of the office of the executive secre-

tary. This report was accepted and referred to the auditing committee, composed of Drs. Vest, Steele, and Morgan.

Dr. Barber then gave his treasurer's report, which was also accepted and referred to the auditing committee, composed of Drs. Maxwell, Hall, and Waddell.

District reports on membership were called for by Chairman Dunn. Dr. Morgan and Dr. Waddell reported for the first district, Dr. Hall for the second district, Mr. Savage reported for the third district, Dr. Miller reported for the fourth district, Dr. Steele reported for the fifth district, and Dr. Dunn reported for the sixth district. Every district, without exception, was in better shape than it had been during the previous year, with increased membership and fewer delinquent members.

Dr. Steele brought up the question of charters for county societies, and this matter was discussed at some length. Without any official action being taken, it was agreed without objection that the president and the secretary draw up and properly execute new charters for all of the new county societies that have been taken into the Association during the past two years, and for all new county societies that will be taken into the Association in the future.

Dr. Vest moved that a portion of the money earned by the WEST VIRGINIA MEDICAL JOURNAL during the year 1929, not to exceed one thousand dollars, be invested in United States Liberty Bonds. This motion was seconded by Dr. Waddell and was unanimously carried.

Dr. Vest then asked the approval of the council for an expenditure of $195 to pay the funeral expenses of Dr. Lind of Huntington. He said that the money had been drawn from the indigent fund with the permission of the president and chairman of the council. On motion of Dr. Morgan, the expenditure was approved, with a vote of appreciation to the Huntington undertaker who had charge of Dr. Lind's funeral.

Mr. Savage asked the permission of the council to purchase magazine filing boxes for the library of the Association, in which to keep all of the medical journals and periodicals received by the library. He presented a sample box used by the library of the American Medical Association. Dr. Vest moved that a supply of the boxes, not to exceed five hundred, be purchased. This motion was unanimously carried.

The question of the appointment of a state library committee, which was recommended in the report of the secretary, was taken up for discussion by Dr. Ray and Dr. Vest. On motion, it was agreed that the council should recommend the appointment of a state library committee at the next meeting of the house of delegates of the Association.

The secretary was excused from the meeting and in his absence the following resolution was offered and adopted:

"WHEREAS, Mr. Joe W. Savage has been very faithful and successful in the management of the business affairs of the West Virginia State Medical Association and of the WEST VIRGINIA MEDICAL JOURNAL; therefore, be it

"*Resolved*, That we commend Mr. Savage upon his work, and that we further show our appreciation of his efforts by allowing him a bonus of $400.00 for the year of 1929 and set his salary at $4,200.00 for the year 1930."

Dr. Steele brought up the question of carrying the $25,000 life insurance policy on Dr. Hugh G. Nicholson, which was briefly discussed. It was pointed out that payment on the insurance was not due until July 1, 1930, and that the question of carrying the insurance another year would be voted upon at the annual meeting next May. No action was taken, pending a decision on this matter by vote at the annual meeting.

Chairman Dunn then called for discussion on the abolition of the medical defense fund at the Martinsburg meeting on May 23, 1929. Mr. Savage read a communication from Dr. J. Howard Anderson, councillor for the fifth district, protesting against the abolition of the fund on behalf of the McDowell County Medical Society. Dr. Maxwell spoke at some length on the question, citing cases in which the medical defense fund had been very beneficial and presenting letters to show that many societies throughout the state wanted the fund reinstated. Dr. Maxwell asked that the sum of one dollar be collected from each member of the Association to keep the medical defense fund intact, pending action on this matter at the annual meeting next May. He pointed out that if the house of delegates did not reinstate the medical defense fund and make it retroactive from January 1, 1930, the money collected for the fund could be returned to the members who paid it.

Dr. Ray, who introduced the resolution abolishing the medical defense fund, then took the floor at the request of Dr. Dunn and expressed his views. He said he introduced his resolution because he knew

that the operation of the fund was not a sound financial business venture. He felt and desired that the fund be reinstated, but he thought certain changes should first be made that would place the operation of the fund on a sound financial foundation. Among other things, he thought there should be a medical defense committee in each councillor district to investigate the malpractice suits originating in each district. He also felt that the money should be expended to pay for the services of expert witnesses, instead of for legal services.

Dr. Steele spoke upon the need of the medical defense fund in the state, and Dr. Harry Hall spoke on the parliamentary aspect of the case. Dr. C. H. Hall and Dr. Waddell also discussed this question at some length. All urged the value of commercial insurance.

Dr. Vest spoke on the lessons to be drawn from the discussion and moved that a commttee of three be appointed by the council chairman to work out plans for reinstating the medical defense fund at the meeting of the house of delegates next May. This motion was unanimously passed, and Dr. Dunn appointed Dr. Maxwell, Dr. Morgan and Dr. Waddell to serve on this committee. It was then moved that the secretary be authorized to assess each member one dollar for the medical defense fund, with the understanding that the assessment be returned if the fund is not reinstated and made retroactive at the May meeting.

The meeting adjourned after the two auditing committees reported that the books and accounts of the treasurer and the executive secretary had been found correct and in proper balance.

The Secretary's Report *

The move from the two small rooms in the Professional Building to the present location was made on January 15, 1929. We have three rooms at the present time. The cost of maintaining the present office is approximately $15 per month more than was paid in the Professional Building. However, the Kanawha Medical Society has agreed to pay $10 per month to help defray this additional expense. The Kanawha Medical Society has already turned over $120, which takes care of its obligation for 1929 in full. With the present arrangement of offices we have a small storage closet, an executive office, a reception and meeting room, and a library, at a cost of $40 a month to the Association.

* Presented at the Council meeting at Charleston on December 30, 1929.

The library was established because of the available facilities. We receive approximately 40 medical journals and periodicals each month in exchange for the WEST VIRGINIA MEDICAL JOURNAL. In addition to the medical journals, we also receive four or five medical books each month from publishers seeking reviews in the WEST VIRGINIA MEDICAL JOURNAL. With this material to start with, we established this little library at practically no cost and it is maintained at practically no expense. During the past year many books have been presented to the library by members of the Association. We started out with 25 or 30 books and we now have more than 500 volumes on our shelves. It is true that most of them are out of date and many of them are worthless, but what is of interest is the fact that books are being donated. I think the day is not far off when an occasional library will be bequeathed to the Association. The library is not used to any great extent. An average of three to four doctors drop in each week, and occasionally a lawyer will come in to look up something. But the library has proven its value upon several occasions. A member will 'phone in for an article that appeared in the November, 1928, issue of the *Nebraska Medical Journal*. He will want it in a hurry. He gets it in a hurry, and from that time on he is a hearty booster of the library and of the West Virginia State Medical Association.

I would like to recommend at this time that a state library committee be appointed, if you gentlemen are interested in this phase of our work. If such a committee could be appointed, I think it should be allowed to spend about $100 a year, possibly a little more, in subscribing to certain medical publications that do not exchange with our own JOURNAL. I have been working on this library idea alone, and more or less in the dark. If this library is ever going to amount to anything, it will have to be led along by the guiding hand of a good committee. You can readily understand that a man not schooled in medicine is a poor person to gather and collect medical literature.

Now, a word or two about a new plan we worked out and put into execution through the committee on professional relations. Most of you will remember back, several years ago, when the Kanawha Medical Society, and perhaps one or two other county societies, began newspaper advertising campaigns on the idea of "Pay Your Doctor First." The idea, every one agreed, was very good, and the campaign was conducted here for one year. I think it did some good. Each member of the Kanawha

Medical Society paid so much per month to cover the cost of the campaign, and right there is where the plan fell down. The campaign cost too much money and the doctors didn't want to tackle it for another year. We took the same idea and worked it out without cost through the WEST VIRGINIA MEDICAL JOURNAL. We went to the *West Virginia Review* and the *West Virginia Wild Life* magazine and offered to exchange advertising with them. These two publications cover the entire state and they have a combined circulation of more than 30,000 copies each month. We use our free space in their magazines to put across the "Pay Your Doctor First" idea. Now this advertising may not be worth much, but it is bound to be worth something. But, no matter what it is worth, the fact remains that it doesn't cost anything.

Membership.—Later in the morning, when the councillors report, you will notice a distinct improvement in almost every councillor district. Now, looking at the membership as a whole, the improvement is a little more marked. We now have 1,104 members in good standing, and I believe it is the first time in the history of the Association that the membership has reached the 1,100 mark. Last year we had 1,028 members at the end of the year, or 76 fewer members than we have this year. In 1928, at this time, we had 92 delinquent members. This year we have only 48. The fact that we have so few delinquent members is, to me, a pretty good indication that the doctors in West Virginia are becoming better acquainted with and more appreciative of the work of the Association. Last year was the second time that the delinquent list had dropped below 100 members, and that fact was pointed to with considerable pride. This year the list has dropped below 50 members.

One new county society was formed in 1929, at Point Pleasant in Mason county, and a second society, Hancock county, was reorganized and taken back into the Association after a suspension of ten months' standing. Mason county hopes to combine with Jackson county at some time in the near future, and steps have already been made to get an organization in Jackson county. The Hancock county society, to show its good faith, has already sent in a 100 per cent membership report for 1930, with a check enclosed.

The Journal.—The WEST VIRGINIA MEDICAL JOURNAL has enjoyed a very successful year. It finished up last year with a cash balance of $2,194.48. At that time the publication committee decided to increase the size of the JOURNAL from 80 to 96 pages and to use a better grade of paper than had been used before. These changes naturally called for a greater expenditure per month, and the cost of publishing the JOURNAL for this past year was increased more than $700 over the previous year. This increased cost cut down the profits, but additional advertising that has been secured during the past year has kept the JOURNAL comfortably fixed and a profit has been shown every month. The cash balance is now $3,192.91, or approximately one thousand dollars more than we had last year. This amount is represented by a savings account of $500, Liberty bonds in the amount of $1,500, a checking account of $1,187.91, and $5.00 cash on hand. This council, last December, authorized the purchase of the Liberty bonds, and fixed the amount not to exceed $1,500. Consequently I placed an additional $500 in a savings account so that it could draw interest.

Getting back to the subject of advertising, it may be of interest to say that the volume of advertising in the January, 1930, JOURNAL is the largest we have ever had. Only once has this volume gone above the $600 mark, and that was last September, when it reached $604.55. The January JOURNAL, which is just off the press, contains a total volume of $641.55. Practically all of our advertising contracts expire at the end of each year, and then we are faced with the problem of getting them renewed. This year we lost only one contract out of the whole lot, and it was for only a quarter-page insertion. All the rest renewed, and, on top of that, we secured seven new contracts that began in the January issue. This is a pretty good indication that the JOURNAL will continue to thrive during the coming year.

I think this report will show, without going into further details, that the Association and the JOURNAL have been progressing nicely through the past twelve months.

Civil Service Examinations

The United States Civil Service Commission announces open competitive examinations for the positions of medical officer, associate medical officer, and assistant medical officer. Applications for the above-named positions will be rated as received by the Civil Service Commission at Washington, D. C., until June 30.

The examinations are to fill vacancies in hospitals of the Veterans' Bureau, the Public Health Service,

the Indian Service, and in other establishments of the federal classified service throughout the United States. Competitors will not be required to report for examination, but will be rated on their education, training, and experience. Full information may be obtained from the United States Civil Service Commission at Washington, D. C., or the secretary of the United States Civil Service Board of Examiners at the post office or customhouse in any city.

The White Sulphur Program

The scientific program for the sixty-third annual meeting of the West Virginia State Medical Association, to be held at White Sulphur Springs on May 20–22, inclusive, was practically completed at a meeting of the committee on scientific work which was held at Huntington on the morning of January 23. Those present at the Huntington meeting were Dr. Walter E. Vest, president of the state association; Dr. Howard T. Phillips, of Wheeling, chairman of the committee; Dr. Robert King Buford, of Charleston, and Dr. R. C. Hood, of Clarksburg, members; Dr. F. T. Scanlon, of Morgantown, and Dr. S. S. Hall, of Fairmont, representing the section on eye, ear, nose and throat; Dr. A. G. Rutherford, of Welch, and Dr. G. G. Irwin, of Charleston, representing the surgical section, and Joe W. Savage, state secretary.

Among the out-of-state men to appear on the White Sulphur program will be Dr. E. R. Arn and Dr. Walter M. Simpson, of Dayton, Ohio; Dr. Charles McCuskey, of the Mayo Clinic, Rochester, Minnesota; Dr. M. Y. Dabney, of Birmingham, Alabama; Dr. James H. Smith, of the McGuire Clinic, Richmond, Virginia; Dr. Gabriel S. Tucker, of Philadelphia; Dr. Thomas O'Rourke, of Baltimore, Maryland; Dr. J. Morrissette Smith, of New York City; Dr. W. R. Whitman, of Roanoke, Virginia; and Dr. George H. Bigelow, state health commissioner of Massachusetts.

The state men who will present papers before the general and the sectional meetings will be Dr. C. H. Clovis of Wheeling, Dr. T. W. Moore of Huntington, Dr. Thomas W. Nale of Edwight, Dr. F. C. Hodges of Huntington, Dr. A. E. Amick of Bluefield, Dr. H. G. Camper of Welch, Dr. E. C. Hartman of Parkersburg, Dr. Matthew Zubak of Wheeling, Dr. R. J. Wilkinson of Huntington, Dr. O. D. Barker of Parkersburg, and Dr. C. F. Fisher of Clarksburg. With one or two exceptions, acceptances have been received from both the state and the out-of-state speakers.

Selection of the state men to open the discussions of the various scientific papers was tentatively made at the Huntington meeting of the program committee. These names will not be announced until a later date, or until acceptances have been received. The subjects of the various papers to be presented by both the state and the out-of-state men will also be announced in an early issue of the JOURNAL.

FROM OTHER JOURNALS

Scientific Medicine

It has been said that the true physician is a gentleman and scholar (in order words, he is altruistic and scientific).

Without the spirit of altruism and a thirst for accurate knowledge, the practitioner of medicine becomes a sorry thing—profiting by a more or less ritualistic empiricism: upon the misfortune of his fellows.

In the past, altruism, in the guise of poor or no pay for the doctor, was the generally accepted custom; but with the marked recent changes in education and practice, and in living generally, this spirit of medical altruism—under civilization (like the spirit of frumentum—under prohibition) has been diluted.

In medical education and practice the development of a definite and tangible "capital investment" and an ever-present and increasing burden of "overhead" constitutes a real deterrent to, and many times actually prevents, the exercise of altruism by individual practitioners. Consequently this privilege has often been delegated to endowed foundations, to insurance or industrial organizations, or to municipal, state or federal institutions. (This will not be discussed further at this time.)

Relative to the second qualification, an urge toward accurate, unbiased knowledge and information must be active in the physician if the practice of medicine is to be improved and made more valuable.

It has been intimated that worthwhile discoveries, improvements or modifications in medicine can be expected only from the elaborately equipped, heavily endowed, large school or hospital, and that the physician in the smaller community can not, and, in fact, need not, try to do other than follow in the footsteps of those so situated. And, therefore, we have been prone to delegate our scientific thinking, along with a large part of our altruism and our athletics, to the foundations, endowments and universities. Such action is neither necessary nor is it

desirable, as it tends to the development of an intellectual laziness that removes one of the chief compensations in the practice of medicine.

Many of the outstanding advancements and accomplishments in medicine have been made by physicians situated far from the teaching institution. (Beaumont's studies on Alexis St. Martin will do for an example.) The history of medicine is full of similar instances.

Sir James MacKenzie said: "Far more knowledge is to be acquired by a thorough study of a few cases than by noting the more prominent symptoms of a large number of patients. Scientific medicine calls for careful observation, accurate recording and judicious comparison which allow and justify a conclusion. Such a logical process is available to all sincere, earnest and honest medical practitioners, of the smaller and outlying regions, as well as to those situated in the so-called centers."

Regardless of the size or location of one's practice there is always opportunity for the physician to observe, to record, to compare and to conclude, relative to disease processes, their prevention, their natural course and their course as modified b various types of treatment. For example: Similar cases may be grouped in series with different treatments and, at times, *without* treatment. Symptoms before may be compared with symptoms after treatment. Surgical treatment may be compared with the medical management. Remote results may be compared with immediate results.

Valuable as primary results are, it is the remote or final result that tells the tale, and usually this important datum is available to the general practitioner or the physician in the smaller center, where contact between patient and physician is more continuous than in the big cities.

Instances in which, through misunderstanding or otherwise, procedures or medication which were thought to be plainly indicated were not carried out, may serve as controls, so necessary for comparison and consideration in evaluating the methods which were actually carried out in similar cases. These are only a few of the possibilities in scientific medicine available to each and every physician.

Circumstances and conditions may prevent or limit the altruism of a physician; but, up to now, no circumstances or conditions serve as a real barrier to the physician exercising reason and logic, *i.e.*, being scientific, in the practice of his calling. F.G.C.
—*Wisconsin Medical Journal.*

Parades and Medical Practice

We claim to be just as patriotic as our neighbors, and perhaps even a little more so. Like every true American, we like a military parade, and even hope that the day may yet come when we shall see the naval officers on horseback instead of riding in carriages. We realize that it is in the nature of parades to obstruct traffic, and we can bear our share of the inconvenience with equanimity. But it is part of our function to speak in the interests of the sick—the poor unfortunates who must stay in bed while the soldiers and bands march on. These invalids require attendance, doctors must be on the go, consultations must be met, hospitals must be visited, operations must be performed, and women must be confined. When a parade is more than a half-hour in passing a given point, and a hurried physician is on the wrong side of it and can not break through, either on foot or in a car, and is losing time and patience (perhaps even patients), the point of professional endurance is passed!

In parades of any kind of undue length, the police should open a way through at stated intervals.—*Pennsylvania Medical Journal.*

Encourage the General Practitioner

Public welfare demands the hastening of the day when the general practitioner shall come into his own. This does not mean a return of the faithful, romantic "old family doctor" of song and story, but the vesting of the care of general human ailments in one man who shall be modern, well educated, thoroughly up to date, and well equipped mentally to care for the major portion of the ills that afflict mankind. This does not foretell the passing of the talented specialist whose skill at times amounts to genius, but it is the prophetic writing on the wall that means the downfall of the mediocre physician whose announcement that he is a "specialist" frequently betrays that the only thing about him that amounts to anything is his prices. Encouraging the man who is in general practice, and so instructing medical students in the necessity of maintaining a high degree of medical knowledge and skill, will develop the growth of a class of specialists whose claim to the title and distinction arises from an all-around perception, prescience, knowledge and familiarity with the branch of medicine or of surgery in which they profess to excel, contrasted with present tendency to choose specialists from a group of men whose choice has suffered from the indecision or misinformation of immaturity, or from

accident of environment or association. With more general practitioners of the right calibre, attending far more of the current and generic ailments of mankind, many perplexing problems of the medical profession and of medical organization will disappear. And, let it be repeated, the foundations will be laid for a group of specialists whose grounding in the practice of medicine will prevail to make of them the most dreaded foes of disease and accident that the world has ever known. They will coöperate with and not undermine the general practitioner, and thus perpetuate the sanity and balance for which scientific medicine has always been the exponent. —*Illinois Medical Journal.*

Suggested Crime

Some two years ago the writer commented in these columns upon the contagion of suicide; the serious menace of repeated suggestion lent emotionally unstable folk, by the appearance in our news sheets of minute details of suicides, their motives, methods and sequences. A notably conspicuous and ghastly double tragedy has occurred in our vicinity recently, supporting the same contention. Within a few weeks press dispatches from France featured a very unusual trial: an instance of matricide, in which the son shot his mother because of her age, suffering and incurability. A French jury set him free. These accounts were not only featured in the papers, but they were followed up by a series of interviews with notables in various countries, securing expressions of approval or disapproval. Suffice it to say that the jury had enough distinguished support from those who would likewise yield to the young man "the position of judge, jury, and executioner"—not to mention temporal control of the divine spark of life —so that they need not have felt lonely on their emotional island.

Thanks to our amazing knitting together of the world, and our ever-increasing interdependence, it is difficult to dissociate these newspaper accounts from the northern Minnesota sequel. In brief, it was the shooting to death of a seventeen-year-old victim of a devastating birth palsy—with all its succeeding faulty developments—and the suiciding of an overwrought father. The details can easily be surmised —a helpless child—a thoughtful, indulgent and provident father—a search for causes, remedies, or reasons back of it all—result, futility.

And yet, there were two other lovely children in the family, and a little city full of their equals; why so little glory in the fulfillment of the many because of the grief for the blighted one?

The curtain usually drawn over such a glimpse of the awful potentiality of the human consciousness is that such an act was the result of an unsound mind. The medical opinion will vary, but for the most part it would be a negative one. The irrational mind does not deliver so much courage. It is said that each of us is a personality mosaic, made up out of all our life contacts. These are no longer unit affairs, man to man; the printing press and a thousand agents designed to keep it busy have multiplied the complexity of this mosaic. The press will publish that which is news—always. To those behind the press—who obviously believe so wholeheartedly in advertising and repetition—why is so much repetition used in these suicidal and homicidal stories? Did you notice that recently a long viaduct near Los Angeles was patrolled to prevent an epidemic of jumpers after one had shown the way? —*E. L. T. in Minnesota Medicine.*

Newspaper View of Medical Publicity

From a number of comments in the lay press, we have selected one from the *Vernon Record* as typical of the newspaper on medical publicity. The editor is evidently desirous of being fair, and evidently he is a man of intelligence. Read his editorial:

"When ethical medicine comes out from the shadows of mysticism and semi-obscurity into the sunlight of publicity, doctors will be freed from their fear of each other, their tongue-tied policies, false modesty and inherited, antiquated, ethical idea that printer's ink is unprofessional. This was the opinion recently expressed by Dr. J. E. Dildy of Brownwood, president of the Texas State Medical Association. As far as he goes, he is unquestionably right in his assertion, but he could have made his declaration against the antiquated policy of medical men much stronger without overstepping fundamental facts.

"There can be no doubt that medical men owe it to themselves to let the world know what they are doing. This is an age of frankness and openness, not one of secrecy. Publicity has created public interest that has made for improvement in almost every human activity. It is really surprising that a group of people as intelligent as medical men must be in order to maintain their standing in their profession still subscribe to a policy of an almost forgotten age.

"The *Record* does not view the matter from the point of the individual physician, but from that of

the public. Orthodox medicine owes it to the public to keep it informed as to its capabilities for preventing and curing diseases. Newspapers of today are overburdened with advertisements of certain cures for almost every disease imaginable. The makers of these so-called cures are getting rich because there are thousands of people anxiously looking for something that will alleviate pain or suffering of some sort, and they are ignorant of what to do. It is grossly misjudging the people to conclude that each person that buys a so-called cure is illiterate and actually expecting the medicine to do all that the advertisement said it would. As a matter of fact, the buyer of the patent medicine probably is doubtful that the results will be satisfactory, but he does not know what to do, and is willing to gamble the price of the medicine on anything that gives promise of relief.

"Obviously, the medical profession could render the person in that state of mind a great service by publishing reliable information from time to time. The medical profession is obligated to serve humanity, and the public distinctly needs a service of this type. Advertising, or publicity, as it may be, is educative. Through advertising the public has been taught to adopt higher living standards, and now confidently expects to be kept informed of new development through the medium of advertising. Higher health standards could be taught in the same way. They should be. It would mean improved health conditions and would result in a great saving to the public annually by reducing graft of the producer of widely heralded panaceas that are really worthless.

"Perhaps it would be more practical for the medical men to advertise in groups, representing associations. That could be worked out among themselves. The fundamental fact is, the public needs to know more about the medical profession, and it is up to the members of that profession to spread the information needed."

The editor will be agreed with, at once, that the medical profession owes it to itself, and to its public, to speak frankly, openly, and at every opportunity concerning scientific medicine. If the editorial quoted assumes that the medical profession is not interested and not anxious and willing to go to the bat just exactly as is suggested that it should be, he simply is not informed. We not only have begged for the opportunity to do just this, but we have paid out money in large sums and used time that we should have been using in support of our families, in doing just that. Indeed, the medical profession has not sought to perpetuate the conditions of secrecy and mysticism that were rife in the early days of medicine. The contrary is true. The medical profession has been the leader, from start to finish, in separating fact from fancy and science from mysticism. It has been said that if the leaders of religion had been as active in doing for religion what the medical profession has done for medicine, modern civilization would be resting upon a more substantial basis. The same might be said with regard to other developments of our day and time.

We likewise agree with the editor that the newspapers of today are overburdened with advertisements of quack remedies, and that the advertisers are getting rich at the expense of a credulous and helpless public. We recognize the practice of cult and quack medicine as potentially murderous, and we look upon the money spent by these people in putting out their propaganda as blood money. We have long since refused to accept for our own publication advertising of a sort much less vicious but which is not in thorough accord with scientific medicine. The newspapers should do the same thing As we have said, many times, we do not blame the newspapers so much for this practice, because of the peculiar circumstances surrounding them, which matter need not be discussed here. At the same time we feel that we should not be expected to class ourselves with these people in any particular, much less in advertising propaganda. If it can be visualized, let one imagine a newspaper filled with display advertisements lauding the different claims of the great variety of practitioners of medicine, including the practitioners of scientific medicine. Could the reader possibly "beware"? In truth, the most plausible liar would get greatest results.

The suggestion that physicians advertise in groups, representing their organizations, is really a good one. Indeed, the practice is not altogether rare. The public needs its family physicians and its specialists. While it is true that no medical society can advertise its members on a comparative basis, and certainly no society would say to the public that each of its members is entirely qualified to practice scientific medicine, at the same time the fact might be established that only those who have been authorized by the state, following an examination made before a board comprising representatives of the several so-called schools of medicine which make any pretense to scientific practices, are members of the group doing the advertising.

No, the medical profession is not opposed to publicity. It will join the newspapers and the radio

broadcasting stations, and every other proper agency in the state which can approach the public in giving, in detail, the facts of scientific medicine and in advising the public what it should do to get well and keep well. But, in doing so, we must insist that there be no selfish interests involved. No self-respecting physician will do these things for his own aggrandizement and profit.—*Texas Journal of Medicine.*

Diabetes and Diabetic Coma

An editorial in the *New England Journal of Medicine*, November 20, 1929, discussing the present-day treatment of diabetes and diabetic coma, says on the shoulders of the family physician ultimately rests the hope of the prevention of diabetes and diabetic coma, and proceeds:

"For every diabetic day spent in a hospital, we suspect there must be a hundred diabetic days lived in the home, and the shepherds who watch these diabetic sheep as they wander and stray through life are the doctors who practice alone, unaided by hospital facilities. Recently we have learned that, during 1928, in Massachusetts coma mortality in hospitals and outside of hospitals was essentially identical. About 9 per cent died of coma. Possibly this figure is too low because, unfortunately, many certificates bear the term *diabetes* alone. So low a coma mortality is a splendid tribute to our state and is evidence of prophylactic coma treatment.

"Success in the treatment of the patient actually in coma comes when the patient receives continuous attention until well over his acidosis. In the words of our author, 'camp on the case,' but we would add *and work, too.* Many a patient will be rescued by following his clinical course with blood-pressure readings, observations of the pulse, and hourly analysis of the urine, even if his physician is not so fortunately placed as to be able to secure data upon the content of sugar and carbon dioxide in the blood."

All of which leads us to say that the family physician need not be helpless if confronted with a case of diabetes or diabetic coma, because, perchance, hospital and laboratory facilities are not available. By the use of ordinary commonsense, keen observation and a wise caution, the practitioner may proceed to treat the case of diabetes with or without coma by the ordinary clinical methods employed before hospitals and laboratories were available, with a fair assurance of reasonably good results. Science is wonderful, but so also is clinical judgment. Personal observation fully substantiates the statement made. —*Nebraska Medical Journal.*

WOMAN'S AUXILIARY

Auxiliary Health Program

Below will be found the official health program of the Woman's Auxiliary of the American Medical Association. It comprises two parts, dealing with public and personal hygeine, respectively. These are the fundamentals upon which Auxiliary work for improvement of public hygeine should be based. The program follows:

Recognition of the fact that public health work is a highly technical job, requiring scientific, technically trained workers. That health work undertaken by lay women with no knowledge of the public health problam as a whole is necessarily fragmentary and ineffective.

Recognition of the fact that every state, county and city is entitled to a scientific, full-time health department (organized not to treat the sick but to prevent disease and promote health), adequately financed, free from political domination, and providing continuity of service to a trained personnel so long as work is efficient.

Recognition of the fact that the first and most fundamental job for lay organizations like the Auxiliary is to secure such scientific, full-time health departments and adequate health protection, in their state, their county, their city or town.

Recognition of the fact that where efficient, full-time, scientific health departments do not exist (and only about ten per cent of the rural districts of the United States have anything approaching adequate health protection), health activities must be initiated and carried on by volunteer, unofficial agencies; but that all such work should be so planned and administered as to serve as stepping stones toward the full-time official health department, and that when the full-time official health department, with workers trained for public health work, has become an accomplished fact, lay organizations should support and coöperate with the official workers and should be willing to take orders from them.

Recognition of the fact that no health department, state, county or city, can do effective work without intelligent coöperation of the public; that such public coöperation depends upon widespread health education; that lay organizations can do this educational work, and are needed for it; and that the Auxiliary can be one of the most valuable tools for an official health department to use in this work, because it can, by its education of the public concerning the official

health department's work and needs, be the means of gradually eliminating or preventing political interference with an efficiently working department, and thus insure to it uninterrupted public service.

Most volunteer agencies do not yet realize the wastefulness of their individualistic efforts. One of the first things the Auxiliary should do is to work for a change of attitude in other volunteer women's organizations. Health officials know that it is not always the work which makes the greatest emotional appeal to the public which most needs to be done. Unfortunately, most women do not know this. This is something the doctors' wives might well undertake to teach other women.

The National Auxiliary recommends, therefore, that each State Auxiliary undertake, under the direction and with the help of the Public Health Committee of the State Medical Association and of its Advisory Council, a study, *first of all*, of the fundamental principles of health promotion and disease prevention; second, of the set-up considered essential by public health experts for an effective state health department, of qualifications of personnel, adequate budget, and the like; and, third, of the state health conditions; that it devise means of acquainting all the state board members with the result, and that recommendations for educational work by the county auxiliaries be based upon the conditions found.

In states where all is well and where time has developed good official health machinery and good health conditions, general knowledge of the fact will tend to prevent interruption of the excellent work, and will be a source of satisfaction to the women of the state.

In those states where there is much yet to be done, this investigation will indicate what sort of work needs doing first. For example, in those states which are not in the birth registration area, the auxiliaries would, without doubt, wish to tackle, as their first job, the ninety per cent birth registration problem. In those states in which the state health department believes the "county health unit" to be the solution of the rural health problem, the county auxiliaries should be encouraged to take as their chief work such persistent and widespread education of the public as will gradually create a general demand for the full-time county health department. In those states where the rural health work is directly done "long distance" by the state health department, the county auxiliaries, if willing to work, and work under the directions of the state health department, can carry on intensive local health education work which would be impossible for the state department without intelligent local coöperation.

To those auxiliaries which agree with these ideas the committee recommends the study of vital statistics and their value; comparing the vital statistics of the state with those of other states and comparing the vital statistics of the different counties of the state; comparing the vital statistics of the cities with other cities in the state and in the United States. Study should also be given the state health department, its organization and program, for general state work and for coöperating with the counties in improving county health conditions.. The value of the public health nurse and the county health unit as a possible solution of the rural health problem should also be taken up.

An outline of the community-wide conditions which affect health follows:

Milk: Milk standards, why necessary, what milk standards your community needs. How are these needs being met?

Housing: Your community housing laws; housing conditions as they have developed under these laws and as they affect health; improvements needed.

General sanitation and its relation to the death and morbidity rates: Sewage disposal; water; garbage; flies; dust, street cleaning, etc.

The improvement of personal hygeine in any community is almost entirely a matter of education. Here again the Auxiliary members must first educate themselves before they can take a safe part in educating the public. The committee, therefore, recommends that the Auxiliary study programs including such subjects as health promotion, prenatal care, child welfare—infant and pre-school hygeine, school hygeine, mental hygeine, and social hygeine. The advantage to the public of general compliance with health regulations should be studied, together with the periodic health examination and the control of communicable diseases.

The entire program should close with a survey of all the private agencies doing health work in the community, and a discussion of the possibility and desirability of centering the direction of all such work in a full-time, scientific health department, under which the private agencies, while still maintaining their identity, would work in complete coöperation.

MONTHLY MORBIDITY REPORT

BY COUNTIES

PERIOD ENDING DECEMBER, 1929	Chickenpox	Diphtheria	Influenza	Measles	Meningitis, Cer. Spi.	Poliomyelitis	Scarlet Fever	Smallpox	Trachoma	Tuberculosis, All Forms	Typhoid Fever	Whooping Cough
Barbour	9	----	----	----	----	----	----	----	----	----	----	----
Berkeley	----	2	----	----	----	----	3	----	----	----	----	----
Boone	18	3	4	----	----	----	3	1	----	----	3	1
Brooke	3	1	----	----	----	----	21	----	----	----	----	4
Cabell	----	4	----	13	1	----	10	6	----	----	----	----
Clay	----	2	----	----	----	----	5	----	----	----	----	----
Doddridge	9	----	30	----	----	----	10	----	----	----	----	----
Fayette	3	4	----	----	----	----	8	----	----	----	2	20
Gilmer	----	----	----	----	----	----	6	----	----	----	----	----
Greenbrier	1	----	1	----	----	----	9	----	----	----	----	----
Hampshire	----	----	----	----	----	----	4	----	----	----	----	----
Hancock	----	1	----	----	----	----	8	----	----	----	----	----
Hardy	----	----	----	----	----	1	----	----	----	----	5	----
Harrison	47	3	----	1	----	----	19	----	----	----	2	9
Kanawha	46	10	----	1	----	1	16	----	1	10	6	13
Lewis	4	1	----	----	----	----	12	----	----	----	----	1
Lincoln	----	----	----	1	----	----	----	5	----	----	1	----
Logan	1	3	----	1	----	----	10	45	----	----	3	2
McDowell	12	4	----	----	----	----	3	1	----	----	1	6
Marion	2	2	----	9	----	----	6	2	----	3	----	----
Marshall	----	1	----	----	----	1	5	----	----	----	----	----
Mason	10	----	----	----	----	----	----	----	----	----	----	----
Mercer	10	6	14	3	----	3	6	----	----	----	----	3
Mineral	58	2	19	33	----	----	16	----	----	3	1	32
Mingo	----	9	----	333	----	----	2	5	----	----	----	28
Monongalia	1	1	----	----	----	----	1	----	----	1	----	
Nicholas		----	----	----	----	----	----	----	----	----	----	10
Ohio	21	----	1	3	----	----	12	----	----	3	----	8
Pleasants	----	1	----	----	----	----	----	----	----	----	----	----
Pocahontas	3	1	----	1	----	----	1	----	----	----	1	----
Preston		1	----	----	----	----	1	----	----	1	1	----
Raleigh	11	5	----	2	----	----	4	----	----	1	----	14
Randolph	1	----	----	----	----	----	----	----	----	----	2	----
Ritchie	----	----	----	----	----	----	2	----	----	----	----	----
Tyler	----	----	4	----	----	----	----	----	----	----	----	----
Wirt	3	----	7	----	3	----	15	----	----	----	1	----
Wood	2	6	4	1	----	----	7	----	----	5	1	----
TOTALS	275	73	84	402	4	6	225	65	1	27	30	151

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WHAT THE SURGEON EXPECTS FROM THE HOSPITAL *

By A. G. RUTHERFORD, M.D., F.A.C.S.
Welch, W. Va.

It was just ten years ago that Dr. William J. Mayo, at that time president of the American College of Surgeons, during an address at the Clinical Congress of that College, said: "The hospital exists for the patient and not for the convenience of doctors. So long as we concede that doctors and the hospitals exist for the patients and that all our efforts are made for the welfare of patients we are on ground that is fundamental. . . . If the patient is to receive what he has a right to receive, the hospital must furnish certain other things besides an opportunity for the doctor to work. Records and laboratories are matters of very great importance. The doctor, and I would say especially the surgeon, of the last generation was not prone to keep very accurate records. He was accustomed to doing things in an individualistic way which will not be tolerated in the next generation. We must be tolerant with the doctor of this type and teach him the value of records to himself as well as to the patient. To the hospital, however, it is absolutely essential to have accurate records, for otherwise how can the hospital give an accounting of its service?"

These words from one who is universally acknowledged as among the most distinguished of American surgeons set forth several vital points of contact between the hospital and the surgeon who practices in it. Though ten years have passed since they were spoken, I fear that there are today a great many doctors who are inclined to look upon the hospital as a place provided especially for them to display their accomplishments and carry out their individual ideas, rather than a coöperative activity in which the members of the medical profession are but one factor in a common effort on the part of private philanthropy, incorporated institution or governmental activity, to fight disease and physical disablement wherever found, and raise the general standard of public health, human happiness and efficiency. That surgeons can "get along" without any hospitals at all was abundantly proven by early medical history in our own country. We have only to recollect William Beaumont tramping through the primeval forests of Michigan in order to carry out his studies on the functions of the stomach, and attending his patient, Alexis St. Martin, in a log hut where practically all the necessities for existence were lacking; or Daniel Drake practicing and teaching throughout the length and breadth of the Mississippi Valley where the embers of the Indians' campfires had scarcely died out, in order to realize that the really great surgeon is independent of almost everything but his clear brain and skillful hand. Yet how many of us, thinking of ourselves

* Read before the fourth annual meeting of the Hospital Association of West Virginia, at Charleston, December 2, 1929.

in terms of the patient, would want to change places with Alexis St. Martin?

If William Beaumont were alive today he would be the first to insist that the hospital where he made his observations should be up to the standard of the American College of Surgeons in every respect, and I am quite sure he would be only too glad to have his precious records kept for him upon the most up-to-date history charts.

The fact that medical practice generally has made more progress in the twentieth century's first quarter than in any similar period of time since history began to be written is largely grounded on the work which the hospital has made it possible for the medical man, and especially the surgeon, to accomplish. By the year 1900 most of the major operative procedures which we are now using had been perfected. The use of anesthesia and the comprehension of the principles of asepsis had made things hitherto undreamed of readily possible. Twentieth-century progress has rather been along the lines of greater accuracy in diagnosis, more intelligent preparation of those who must undergo surgical procedures, and, more than all, in the careful observation and recording of case histories which thereafter served to guide those faced with similar problems and pointed out mistakes to be avoided as well as maneuvers to be emulated. And the agency which made these things possible has invariably been the hospital.

It is an inevitable rule of life that the reward for the competent assumption of responsibility is more and greater responsibility. Every one who has ever climbed to the top round of the ladder of success has done so with an ever-increasing burden upon his back. Because the hospital has proved so efficient an aid in the progress of surgery, those who practice that art have grown to expect more and more from it, and, when it was not promptly forthcoming, to assail it—not infrequently with bitter words—and to *demand* that every hospital wishing to be recognized as such must conform to a high standard of cooperation with the medical profession. That this demand has worked hardship in some cases there can be no doubt; that it has not infrequently been unjust and excessive is likewise indisputable. But today, I am quite sure, the majority of hospitals which have been "standardized" in accordance with the demands of the surgeons are glad of it, and would not dream of returning to the old hit-or-miss, "rather-more-or-less" methods which prevailed twelve or fifteen years ago, even if they could.

As a surgeon in active practice, often emergency practice, for many years, I can speak from very personal experience as to what a surgeon expects from the hospitals where he is compelled to do his work. And as a hospital superintendent, also of some little time's experience, I know exactly how hard it is to bring a hospital up to standard and keep it there. Efficiency in the hospital, in every department, inside and out, is in very large measure dependent upon the surgeons who work in it, its resident staff, the "attendings" who come in regularly from outside, or the occasional specialist who may grace the modest rural institution with his presence on some super-great occasion. The hospital superintendent has his troubles with all of them, yet he realizes—in his calmer moments, at any rate—that, however unreasonable the individual demands may appear to be at the time they are made, in the main the aim of every surgeon is to have the hospital as nearly perfect as possible, and in this aim every one connected with the institution should share wholeheartedly.

As a matter of fact, the standards which have been required of hospitals during the dozen or more years that have witnessed a concerted effort to improve them, have been imposed quite as much upon hospital surgeons as upon the institutions where they worked. As John G. Bowman, director of the College of Surgeons, has said, "The plan of hospital standardization is the working out of a principle and not the application of a set of rules. It is a plan by which physicians and surgeons are able to pledge right service to patients, not upon sentimental grounds but upon ground that is altogether defensible and creditable." It is a standard that safeguards every patient admitted to the hospital, insisting upon competence on the part of the surgeon, upon the thorough individual study of each case, upon efficient laboratory work, and upon a monthly check-up of the clinical work which has been performed in that hospital. It fixes responsibility and forces the hospital to account for the investment of brains, labor and money that every such institution represents; it encourages and even compels research, demanding, from all who serve there, effort and the expenditure of their best faculties, the cost of which can not be reckoned in money. And, of course, the chief of these workers is the surgeon himself.

Another similar expression of opinion came from the medical superintendent of the great Vancouver minimum standard is not, perhaps, as simple as it General Hospital, who is quoted as saying: "The

looks. But certainly it does not impose too great a burden upon the doctor or upon the hospital. It calls for no undue expenditure of money. It is not impertinent, for it is based upon the sound principles of practice which the profession long ago accepted. It forces a constructive and coöperative scrutiny over all medical work in the hospital; unnecessary surgery, incompetent surgery, lax and lazy medical service, and all commercialism in medicine go down before it."

The surgeons of West Virginia may well consider themselves fortunate in the realization of their expectations of coöperation and service from our hospitals. We now have twenty-two hospitals which are fully approved by the standard of the American College of Surgeons. And in view of our population and economic status this is a record of which we all ought to feel proud, and for which every surgeon in the state ought to have offered a special thanksgiving last Thursday. In all these institutions we can now find "a modern physical plant, free from hazards, with a competent governing body," an efficient chief officer with competent assistants, a thorough record system, facilities for diagnosis and treatment commensurate with modern demands, and the assurance that every member of the medical profession, in any way connected with it, governs his professional conduct in accordance with the best traditions of that profession. This sounds like "a large order." Perhaps the ideal is not realized in every instance; hospitals are human institutions and surgeons are human, too, so all are "liable to err." But I am sure that every one here will agree with me that conditions today are in every way preferable to those existing a few years ago, and that it is because the surgeons expected more of the hospitals and forced them to "deliver the goods" that we have at present much greater possibilities of service to suffering humanity than ever before.

In the end we must return to William Mayo's pungent statement: "The hospital exists for the patient and not for the convenience of doctors." This is really the view of every one of us, though sometimes we can not see the wood for the trees. The hospital finds the demands of the surgeon unreasonable, and the surgeon finds the hospital's response to his demands inadequate. There is friction and, all too often, acute ill-feeling between these two agencies working toward a common end, and in the resulting confusion we lose sight of our main purpose. The complexities of modern conditions do not a little to add to this confusion and prevent our seeing clearly how identical are our interests. William Beaufort may have found his 2,000-mile trek through the woods arduous, but he had the interests of a single patient and the pursuit of a single investigation to occupy his mind. He didn't receive any fees, so he could not have been worried about the ethics of fee-splitting, and he was likewise spared many of the nice distinctions which are imposed upon the modern surgeon. His devotion to his patient could very well be complete and whole-souled.

That many a present-day surgeon can do far more for those under his care is due, in the final analysis, to the efficient aid of his every effort which the hospital affords him, and which he has come to expect much as he does the changes in temperature dependent upon the different seasons of the year. If the hospital fails him he is as indignant as if the fourth-of-July vegetables had been nipped by frost.

This attitude may appear childish. Perhaps it is, yet it is highly complimentary to the standardized hospital of today. It is because our expectations are so seldom unrealized—I am speaking now as a surgeon, not as a hospital superintendent—that we expect so much. And from the viewpoint of the hospital executive I say with conviction that that hospital is indeed fortunate from which its surgeons expect much, for in attaining a high standard and continuing to maintain it in spite of discouragement and perhaps actual pressure from interested sources opposed to those surgeons' standards, it not only reaches its greatest degree of usefulness but it rewards those who have labored to perfect it, as only an achievement carried out in the face of odds can ever do.

THE STATE AND THE GENERAL HOSPITAL *

By WILLIAM S. FULTON, M.D., F.A.C.S.
Wheeling Clinic
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At the dawn of history, when the peoples of the plains of the Euphrates and Tigris and of the Valley of the Nile assembled to form the first states, they did so because they felt the necessity of mutual protection of life and property. With the progress of civilization the state saw its duties extended. It strove not only to protect the lives and property of its citizens, but tried also to protect their health and

* Read before the Hospital Association of West Virginia at Charleston, December 2, 1929.

provide relief in the plight of illness. In these olden times, when state and church were one, it was especially the priesthood that performed these ethical duties. Thus, from the earliest ages of human civilization hygienic measures were advocated by the priests and the sick were ministered unto by these worthy predecessors of the modern physician. When the church became the ruling power during the middle ages, it did not forget the command of its Founder, but cared for the sick. In the old monasteries there were rooms reserved for the treatment of the afflicted ones. Later on, separate buildings—hospitals—were erected for the same purpose. The *Hôtel-Dieu* at Paris and several Italian hospitals which were founded by the church can trace back their history to the twelfth century.

The modern state took over and extended these duties of the early church. Through the activities of its health department it supervises the production of pure food and the purification of drinking water. It prevents the spread of communicable diseases by quarantine, and attempts to prevent certain diseases through immunization of its healthy subjects. I do not need to remind you of the fact that, in progressive states, smallpox has been practically stamped out. Diphtheria is on the decline, and typhoid fever, once the scourge of these regions, has become a rare disease. But what does the state do for those unfortunate citizens who become sick? True, our great state has helped to build and support sanitariums for the tuberculous and has built and maintains asylums for the insane. But the general hospitals are built and maintained by voluntary gifts of the respective communities, without help from the state.

Fifty years ago it was very seldom that a physician advised a patient to go to a hospital. Medical science was not advanced enough to recognize the advantages for the patient and for the doctor which a well-equipped hospital can give. Medical science was not able to attack scores of ailments of the human body which today are considered curable when treated in a well-equipped hospital. Today, when necessary, the hospital helps to take care of the father and restores his health and earning power and brings him back into the family, enables him to resume the support of his family and of himself. The hospital cares for the ailing mother and restores her health, which is so necessary in rearing a family. Finally, the hospital nurses the children back to health and attempts to make the future citizens strong and healthy. Where did our mothers and grandmothers give birth to their children? At home, with the assistance of none but neighbors and a midwife whose only training was experience. What helped to reduce the maternal and infant mortality and save for and provide to the state millions of healthy and happy citizens? Nothing but the hospital, which gave the well-trained doctor the opportunity to apply his science and skill safely.

What could a modern doctor do today without the assistance of a well-trained nurse? He would be handicapped everywhere, particularly when an operation is necessary. No one doubts the value of properly managed post-operative care, and this is possible only with the assistance of a conscientious, devoted nurse. How many lives are saved and how many people are brought back to health, happiness and usefulness because of the ministrations of a well-trained nurse! Where can the nurse get this training which enables her to be so valuable to the doctor, to the community and to the state? From whence does the health department of the state obtain the public health nurses? From training schools which are maintained in every fair-sized hospital, and these hospitals are built and maintained chiefly by voluntary contribution.

Now let me ask another question: Considering the benefits which state, community and citizens directly and indirectly derive from the hospital, what are they giving back in their turn to the hospital? In all communities of this state the individual citizens build and maintain the hospitals. This state, with a few exceptions which I mentioned above, does nothing. I do not ask for paternalism. I do not suggest forms of government such as we see in Europe, where the state prescribes, supervises, directs and watches every step of its citizens from the cradle to the tomb. That would be contrary to our concept of the state. But, on the other hand, there are certain points which are extremely pertinent today which were not essential when our ideas of the state were conceived and formed. There are issues today which did not exist at that time. Nobody thought of preventive medicine in 1775, and yet the state of today has adopted this issue. In 1775, hospitals were mere asylums for the incurable; but, with the advance of medical knowledge, they are today an absolute necessity for every community. Even though we can not accept conditions as they are in Europe, where the state, the community or the city builds, equips and maintains hospitals and appoints and pays a certain number of physicians to take care of the patients, yet we have the right to ask for

more support from our state. There are state-supported hospitals in Pennsylvania, in Ohio, in New Jersey, in New York—to name only a few. Why can not West Virginia do the same? Are we less far-sighted than those other commonwealths? Or are we unable to give financial aid? Or is this state less able to select the hospitals which deserve state aid and therefore give it to none of them? There is no doubt that state aid must come and will come. The doctors and the people see the necessity of more and better hospitals. Good hospitals are expensive, and if good and honest work is to be done in them they can not be self-supporting. There is something wrong with a hospital which profits financially from the care of the sick.

For just one moment let us consider now the financial situation. The average daily cost of a patient in a ward bed, plus food and medicines, is $5.10. The patient himself or the state, if he is taken care of by the compensation law, pays $3.50. The ward beds constituted twenty-five to fifty per cent of the capacity of an average general hospital, although the American Hospital Association only demands a minimum of ten per cent. The loss encountered in treating patients in the ward beds can not be compensated for by the surplus derived from the private beds. The loss must be made up by public contributions, which amount, in the instance of the Ohio Valley General Hospital in Wheeling, to between $50,000 and $60,000 yearly. If it is a privately owned hospital the loss must be and can only be made up by surgical fees, and it is evident that under these circumstances a great deal of unnecessary surgery may be done. On the other hand, under what obligation are the citizens of one community who maintain their general hospital by private contribution to pay for and take care of the ward patients who come from other communities which do not pay a cent toward the upkeep of this general hospital? Should not the state intercede and help this hospital to take care of these patients and enable the hospital and the doctors to do good and honest work? Why should the burden of supporting the hospital, which is for the good of all, be carried on the shoulders of a few? It is not reasonable, logical or fair that only these few should carry the burden of providing care for their ailing brothers. In a true democracy all the citizens should contribute according to their means to the support of the unfortunate who need the medical aid that only a well-regulated, efficient hospital can give. This can be done only through the intervention and coöperation of the state.

ORGANIZED HOSPITALS *

By R. A. IRELAND, M.D.
Charleston, W. Va.

We are at the threshold of the fourth year of the activity of our association. It is inspiring to see the growing interest.

It is not quite true to say that this is the fourth year, because there was an organization that functioned for a few years just prior to the entry of this nation into the World War. I attended one of the meetings here in Charleston about 1915. That was a good meeting of a few earnest men and women who were striving to improve themselves and improve the class of service they were rendering the sick and injured of our state. Their particular progress was blocked by the massing of the brains and brawn of all our people to do the compelling task in war. The reconstruction period held back the reorganization, but, fortunately, this was accomplished in December, 1926. In the years that intervened we learned important lessons. Battles were won by superior organization. The world was made safe for democracy by thoroughly organizing the resources of the world against three military nations. A majority of the best men in hospital work, in medicine and in surgery, became a part of the war machine. With the lessons which they learned and recorded, it is not so difficult for us to appreciate the value of correlated effort.

Twenty-seven years ago there was a wild wave of righteous indignation sweeping this country to destroy the "trusts." Standard Oil and other great companies had their skeletons broken up; but they lived on because their principles of coöperation were right. Some one has said, "Truth crushed to earth shall rise again."

Today, in finance, in farming, in everything, *coöperation* is the magic word.

From our good secretary you have heard a report of activities affecting us during the last legislative session. Time does not permit him to tell all, and modesty does not allow him to take full credit.

The question has been asked again, "Why an hospital organization?" Let me answer: We were able to exert a united strength against vicious legislation.

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* President's Address, annual meeting Hospital Association of West Virrginia, December 2, 1929.

We have coöperated with national agencies to work toward standardization of hospital equipment, in the interest of economy.

We have studied, and urged members to study, the subject of coöperative buying.

We have arranged this program for the inter change of helpful ideas.

When the association has gained more strength, more men like our worthy national secretary may be brought here to help solve problems of whic there are a plenty.

We may arrange collectively for an efficiency expert to make the rounds of our hospitals and show us how to give better service at a reduced cost. This would not duplicate the work of inspectors for the American College of Surgeons, who only criticize the records and quality of work done.

At this time it is very important to evaluate the criticisms that have been hurled at the hospitals and doctors generally over the past two years.

I wrote in the WEST VIRGINIA MEDICAL JOURNAL a few words about the unseemly controversy in Chicago. I want to come out squarely here on the side of organized hospitals and doctors. The wealthy business men who have sought relief for their sins by a gesture of philanthropy at our expense, created by their avarice in years past the poverty which now they wish us to assume. The average hospital makes no profit, and the average doctor earns less net income than the average lawyer, and has a greater investment.

Dr. Will Mayo and Surgeon General Cumming have recently criticized us. Dr. Mayo said: "Hospitals must adopt better business methods, whine less, and think more. Half the population of the United States finds the cost of hospitalization and nursing a great burden."

General Cumming says: "The situation of excessive cost of hospital and medical service presents a challenge to the profession and must be met by a readjustment."

I bring these criticisms to your attention, and suggest that we first make sure our skirts are clean and then answer them in a way that will not offend the public. Certainly this is a time for organization.

In this state we have not generally attained the ideal individual hospital organization. The unit is generally too small. One reason is that the financial burden has rested too generally upon the doctors of each community. A few hospitals have been mad to pay profits, but that does not change the facts I have stated. Time will correct this fault, and it is our duty to be thinking along correct lines. We owe it to those who look to us for guidance and care.

I desire to call upon all hospital members to coöperate cheerfully with the legitimate news agencies of the country, to lay before the public an intelligent record of the work done for sick and afflicted people. The general public can not appreciate what it does not know, and there has not been enough publicity given to all the good work that hospitals have done.

If the reading public were well enough educated to believe fully in the absolute necessity of the work that hospitals do, it would not tolerate repetition of two-column, front-page displays of pictures showing superstitions that belong in the dark ages.

It is unnecessary to say that individual advertising must be left out, if this kind of publicity is to have a good effect.

Articles discussing our affairs have appeared on the front pages of all the important daily newspapers of the nation, and in such widely read weeklies as the *Literary Digest* and *Saturday Evening Post.*

Not enough has been said in defense of the self-sacrificing labor of hospital workers, including doctors and nurses. Surely the Hospital Association of West Virginia will meet this challenge.

FIRE PREVENTION *

By F. E. GREENE
Ohio Inspection Bureau
Cleveland, Ohio

Isn't it a startling fact that the loss of life per fire is greater in the case of hospitals than average property? When you think over this fact you find that it is just what is to be expected. The patients in your hospitals are, for the most part, physically incapacitated to such an extent that they are unable to care for themselves in emergencies. Their condition makes them more prone to excitement and panic and they are more susceptible to injury from smoke and fumes. You have, therefore, the great responsibility resting on your shoulders, as the administrating officials of your hospitals, to protect the lives of the patients in your care to the limit of your ability. The necessity to protect the lives of your personnel is also, in a lesser degree, a responsibility.

To improve the safety of your hospitals becomes an obligation in so far as it is your duty to safeguard the lives of your people. This duty can be best

* Presented before the Hospital Association of West Virginia at Charleston on December 2, 1929.

discharged by eliminating from your buildings all chances of disaster.

You may feel that there are no chances of hostile fire occurring in your particular hospitals, but is that true? Please do not be misled by a good fire record into a false sense of security. Fires do occur, daily, in the best of buildings, and usually when they are least expected. This is an established fact that I urge you to treat as an axiom, assuming that fires are possible on your premises, and exert yourselves to minimize the chances of fires occurring or to limit the loss of both life and property by any one fire.

From what I have said you may gather the impression that I am suggesting that you drop everything immediately and start to search out the various hazards in your institutions. No; I do not suggest such a move. I realize that all of your energy and time, both day and night, is devoted to the immediate care of your patients, and that you do not have the opportunity to spend a great amount of time in seeking to improve conditions likely to be dangerous. So I suggest that you simplify the work on your part and call in a fire-prevention engineer who realizes your responsibility and who will gladly assist you to lighten this burden. He will make a detailed inspection of your hospital and the auxiliary buildings, noting every hazardous condition affecting both life and property. The engineer will then submit a report to you, in which he will point out and explain the hazards he has found and suggest practical methods for the elimination or safeguarding of these hazards. What could be more simple? And, best of all, this service is extended in a genuine spirit of helpfulness and is rendered without cost.

Allow me to explain, briefly, for the benefit of those not acquainted with any inspection bureau, that they are usually privately owned rating organizations which operate under the insurance laws of their respective states. These bureaus have certain obligations, the most important of which is the treatment of all property owners on a basis of equality. The personnel of such organizations includes graduate civil, mechanical, electrical and chemical engineers; also men of wide inspection experience.

While rating is the primary purpose of these bureaus, they also furnish information, without charge, to property owners and municipalities, covering all features which have a bearing on fire prevention, fire hazards, and fire protection. Through this service the public is enabled to get authoritative information on matters affecting insurance cost, benefiting thereby in being able to secure lower fire insurance rates and, what is more important, to better protection to life and property.

All bureaus furnish rate information to subscribing insurance companies which pay for this service on a basis of premium receipts.

Now that you know the purpose of an inspection bureau, I will tell you what their engineers can do to help you.

In the detailed inspection of your property all features are very carefully considered. The construction of each building is noted; the egress facilities, the interior arrangement of the structures, etc. Each single occupancy hazard, such as heating, lighting, power, storage of oils and objectionable materials, and housekeeping, is checked over in detail. Private fire protection, water supply, public fire protection and fire-alarm systems are carefully scrutinized. Since the engineer's primary work is fire-insurance rating, he can also assist you very materially in placing your fire insurance on a sound basis, to yield a maximum of protection at a minimum cost.

The ordinary or common hazards are well known to you, but there are two hazards, peculiar to hospitals, which have but recently been given the consideration they deserve in relation to their gravity. I refer to the storage of cellulose-nitrate x-ray films and the use of flammable anesthetics.

Let us first take up the matter of x-ray films. The terrible disaster at the Cleveland Clinic on May 15, 1929, which was given first-page space in the newspapers throughout the world, focused the attention of every one on the danger of storing nitrocellulose films without adequate safeguards.

It has long been known to those interested in fire prevention that nitrocellulose films would decompose at relatively low temperatures, between 230° F. and 300° F., with the evolution of toxic gases, mainly carbon monoxide and the higher oxides of nitrogen. Years ago, regulations were formulated and published by the National Board of Fire Underwriters, specifying safe storage facilities, the adoption of which would have prevented the great losses in every film fire that has been recorded to date.

For some unaccountable reason, nitrocellulose films have been looked upon as not being very dangerous, especially by those having the most to do with them. People entirely overlooked the fact that the chemical composition of the film base was almost identical with that of smokeless powder. For this reason, films, even in small quantities, are dangerous unless properly safeguarded. Permit me

to ask you this question: Would you allow some one to bring 100 pounds of smokeless powder into your hospital and toss it about carelessly? You most certainly would not. But how about your 500, 1,000 or 2,000 pounds of nitrocellulose x-ray films, with six cubic feet of deadly gas ready to be liberated by the decomposition of each pound? Have you taken precautions to prevent this gas passing through your buildings, endangering the life of every one on the premises?

If the nitrocellulose films will start to decompose at such low temperatures—and I assure you they will—and if the gases of decomposition are so deadly—and I assure you they are, as witnessed by the Cleveland Clinic catastrophe—do you not feel that it is necessary for you to do something to prevent such a disaster in your hospitals?

There are two main alternatives open to you: to surround your stock of nitrocellulose negatives with the necessary safeguards, or use cellulose acetate, commonly known as safety films.

If you decide to provide safeguards for your nitrocellulose films, you have two primary plans to follow: First, to store your negatives in a separate building, well away from the hospital, where no one lives; second, to build a standard vault or provide an approved cabinet inside the hospital.

If you choose to utilize an outside structure, make sure that the film building is so located that if the films should burn no damage would be done to any other building. This will necessitate placing the film storage building at least 70 feet from other buildings, especially the hospital. A test made by the National Board of Fire Underwriters in 1915 showed tha it is possible for a jet of flame to issue from a film storage building where there were but 1,600 pounds of films and project itself 70 feet in a horizontal direction.

If you decide on a film vault or room, by all means construct it according to the specifications set up by the National Board of Fire Underwriters. The main features of a standard vault are fire-resistive walls, floor, ceiling, and door to prevent fire, originating either inside or outside the vault, from communicating either in or out. An ample vent is another feature which is very important. By means of the vent the poison gases are carried away to a point where they can do no harm. Automatic sprinklers are also important. When a fire starts in the films the heads open, directing a spray of water on the films. The water, by its cooling effect, serves to extinguish the fire and also to dissolve some of the gases. These are logical safeguards. An approved cabinet is constructed on the same principle, with insulated outer walls and a vent to the outside.

The other alternative in the use of x-ray films is to employ cellulose-acetate or slow-burning films. Films with cellulose-acetate base are endothermic, or they require the continued application of heat to decompose them. This makes them entirely different, from a safety standpoint, from nitrate films, which are exothermic, or decompose with the evolution of heat. Acetate films will not burn when the supply of oxygen is shut off in an enclosed space, but nitrate films will decompose without a supply of oxygen from the air. Acetate films burn about one-twelfth as fast as nitrate films, hence the name "slow-burning." A fire hazard classification somewhat less than that of ordinary newsprint paper has been assigned to acetate films, so you may consider them as safe in use as pieces of paper of the same size.

A great deal of objection has been raised to the use of acetate films by hospital authorities. Why, it is very difficult to say. The emulsion coating is the same as that on the nitrate film, so their technical behavior does not differ in the least from nitrate films. There is a slight tendency to curl manifested in the acetate film, but röntgenologists using them say that this is not a drawback. The films may be viewed in the stereoscope without difficulty, and no trouble is encountered when they are placed in illuminators. I tell you this because I have had the opportunity to observe several x-ray departments which first objected strenuously to acete films, then, after giving them a trial, became very well satisfied with results obtained. Just a trial is all that is needed and I am sure that you can persuade your x-ray men to give acetate films a fair trial.

By the use of acetate films you eliminate the necessity of elaborate storage equipment, and I feel sure that you will also be anticipating a law in your state forbidding nitrate films in institutional buildings. The tendency is toward such legislation. New York already has such a law. Just give acetate films a trial for safety's sake.

The other hazard that I mentioned as being special in hospitals is the use of flammable anesthetic gases. In this category are included ethylene, ether, and ethyl chloride. Nitrous oxide and oxygen in themselves are not combustible, but are supporters of combustion and will add to the intensity of a fire.

The hazards existing in operating rooms where

ether, ethylene or ethyl chloride are used as a general anesthetic are very similar to the hazards found in the most dangerous of industries. Coal-gas by-products plants, dry cleaners, and lacquer factories are in this class. The conscientious managers of these plants endeavor to introduce every possible safeguard to prevent losses by fire and explosion. They carefully ground every piece of machinery, use vapor-proof lighting and power systems, install humidifying equipment to reduce the static spark hazard, and strictly forbid all smoking or open flames. What have hospitals done to eliminate the very same danger of fire and explosion? I am sorry to say that your answer must be, "Not much!"

The lives of more people are placed in jeopardy in the hospital, so even more attention should be given to minimizing operating-room hazards. The fire-prevention engineer is prepared to advise you as to the best methods of making your operating rooms safe.

Let us devote a minute to the danger in the use of flammable anesthetics. The explosive range of an ether-air mixture is between 1.9 and 22 per cent of volume of ether vapor. The explosive range of an ethylene-air mixture is between 4 and 22 per cent. This means that 2 cubic feet of ether vapor mixed with 98 cubic feet of air will explode. Four cubic feet of ethylene to 96 cubic feet of air will also explode if a source of ignition is applied. The lower limit of the explosive range is so easy to reach that it is probable that the gas-air mixture in your operating rooms is always explosive. Why haven't you had explosions in the past? I can not say, except that the reason must be good fortune mixed with steam from sterilizers. Some hospitals have had explosions and fires in operating rooms, but you already know about these.

If an explosive mixture of gas and air is likely to be present in your operating rooms during the course of operations, something should be done to prevent an explosion or disastrous fire. Ventilation to remove the spent anesthetic before an explosive mixture can be formed is very necessary. Natural ventilation is preferable to mechanical. Electric sparks, both static and conductance, should be guarded against. Your lighting and appliance switches should be vapor-proof in operating rooms. Motors, if used, should be explosion-proof. Telephone bells and buzzers should be kept outside. Static may be effectively guarded against by carefully grounding every object in the room which is practical to ground and the installation of humidification equipment. Maintaining a high degree of humidity will not permit static discharges being manifested in sparks.

High frequency apparatus should not be used in operating rooms when combustible anesthetic gas is used. Cauteries should be used, preferably, with a local anesthetic; otherwise, nitrous oxide alone should be used. Gas hot-plates, gas-heated sterilizers and other devices employing an open flame should never be tolerated in operating rooms. If a fluoroscope is used in the same room with combustible anesthetic gas, the apparatus should be carefully grounded with tubes immersed in oil, and also all controls.

Anesthesia apparatus should be constructed along lines which will permit the greatest degree of safety. The gas induction equipment of one manufacturer has been approved by the Underwriters Laboratories after having been put through the most rigid tests under practical conditions. This apparatus is designed to be spark-proof without any possibility of the gases mixing in the cylinders. Ground connections are provided as standard equipment on both the regulating head and cylinder cart. When you buy new anesthesia apparatus or replace present equipment, I recommend that you secure machines approved by the Underwriters Laboratories, which tests have shown to be safe.

You are faced with the problem of safeguarding your existing gas induction equipment. The fire-prevention engineer can help you work out this problem. The equipment can be grounded by the use of wires to water or steam pipes or by the use of copper mesh lined high-pressure tubing. Charges of static electricity can be carried harmlessly away from the inside of the breathing tube by a metal lining similar to that used in high-pressure tubes. Breathing bags may be made safer by placing strips of moistened sponge inside them. The strips should be about one inch square in section and from eight to ten inches in length. Before each operation, water should be run into the bag and the sponge moistened. The sponge can be rinsed out after each operation. This method is not perfect, but makes old equipment much safer.

A very simple device is about to be put on the market which should serve a double purpose. This device is very simple in character, being merely a vent tube running from the valve of the face inhaler, used with a gas induction apparatus, to the outside of the building. This vent eliminates the strong odor of anesthetic from the room, which appeals to surgeons, and it also removes the combustible gas as

fast as it is used, eliminating the chances of fire or explosion. I expect this device to be ready for distribution by supply houses very soon.

I have tried to show you that all the hazards in your hospitals may be eliminated entirely or greatly minimized by the careful application of the principles of fire prevention. I have tried to show you the great danger in the storage of nitrocellulose x-ray films, and how this danger can be removed by proper storage facilities or the use of slow-burning films. Then I have tried to show you the really enormous hazard encountered in the use of combustible anesthetic gases and how this hazard can be reduced to a minimum. I have, of necessity, merely scratched the surface of the subject of fire prevention, but I trust that I have shown you its great importance.

In conclusion, I urge you to call in a fire-prevention engineer to consult with you on the particular problems encountered at your hospitals. He has a wealth of fire-prevention information which he will be glad to place at your disposal, and he will assist you in working out your fire-prevention problems.

ORIGIN AND HISTORY OF HOSPITALS*

By RT. REV. MSGR. H. B. ALTMEYER
Huntington, W. Va.

A hospital, in the beginning, simply meant a place for guests. That is the meaning of the word according to its Latin derivation, *hospitium* (house guest). In the course of time its meaning was restricted to institutions where the sick were harbored and care taken of them. Among the pagans, the sick and feeble were often put to death.

Hospitals, as institutions for the care of the sick, in reality are of Christian origin. It is true that history mentions a hospital in Ireland, founded by Princess Macha about the year 300 B. C. It was called, in Gaelic, "The House of Sorrow," and it became the residence for the kings of Ulster until its destruction in the year 322 A. D. It is true, also, that the Greeks and the Romans brought some of the sick to the pagan temples, where magical incantations were used for their cure. Some of the sick soldiers and slaves were cared for in the houses of some of the wealthier Romans; but there is no record of any institution corresponding to our modern hospital.

After the example of Christ, who healed the sick miraculously, and the institution, by Him, of a sacrament especially for the sick, the early Christians became noted for their love and care of the sick.

According to some authorities, the first hospital was built by Saint Zoticus at Constantinople, during the reign of Constantine. Saint Ephraim, during the plague at Edessa in the year 375 A. D., provided three hundred beds for the sufferers. Saint Basil built a famous hospital at Cæsarea in Cappadocia, in the year 369 A. D. This Basilias, as it was called, took on the dimensions of a city, with regular streets, buildings for different classes of patients, dwellings for physicians and nurses, workshops, and industrial schools. At Constantinople, in the sixth century, Saint Samson founded a hospital near the church of Saint Sophia. This hospital was destroyed by fire, but was rebuilt by Justinian.

In the west (Europe), the earliest hospital of which we have a record was the one built at Rome in the year 410, by Fabiola. Saint Jerome says that she, first of all, established a *nosocomium* to gather in the sick from the streets, and to nurse the wretched sufferers wasted with poverty and disease.

Pope Symmachus, about the middle of the fifth century, built hospitals in connection with the churches of Saint Peter, Saint Paul, and Saint Lawrence. Belisarius built a hospital in the Vîa Lata about the middle of the sixth century. Pope Pelagius turned his dwelling into a hospital, and Pope Stephen, in the eighth century, restored four hospitals and built three new ones.

During the Middle Ages the monasteries became a dominant factor in hospital work. The famous Benedictine Abbey of Cluny, founded in 910, set the example, which was widely followed throughout France and Germany. At the same time, efficient work was done by the diocesan clergy in accordance with disciplinary enactments of provincial councils. It was prescribed by the Council of Aachen, which was held in the year 836, that a hospital should be maintained in connection with every collegiate church. The canons were obliged to contribute toward the support of the hospitals; and one of their number was to be in charge. The bishops naturally took the lead in this movement, and in the tenth century we find hospitals founded by them at Cologne, Constance, Ulrich, and Augsburg.

From the beginning of the thirteenth century to the end of the sixteenth, according to Virchów, there were no less than one hundred and fifty hospitals in Germany. In the smaller towns of France there was the same hospital movement as characterized Ger-

* Presented at the formal opening of the new unit of St. Mary's Hospital, Huntington, West Virginia, on February 5, 1930.

many during the thirteenth century. The influence of the movement was felt in distant England. All the famous old British hospitals date their existence to the thirteenth century. We may mention Saint Bartholomew's in London, and Saint Thomas's Hospital which was founded in the year 1213. Bethlehem, or, as the name was shortened, Bedlam, was founded about the middle of the thirteenth century. Originally it was a general hospital, but finally was used exclusively for the insane. Hence the meaning of the word *bedlam*.

Mr. Arthur Dillon, an architect, writing in *The Mail and Express*, May 7, 1904, describes one of the hospitals erected during the thirteenth century at Tonierre in France by Margaret of Burgundy, sister-in-law of Saint Louis: "It consisted of a ward, a building attached to it by a covered passage, in which Margaret herself lived for many years, and separate buildings for kitchens, storage of provisions, and for the lodgings of the twenty monks and nuns who had charge of the sick. . . . The medicine was stronger than our degenerate generation might be able to bear, but ,then, all of their medicines were apt to be stronger at that time. . . . The situation of the hospital might well be thought ideal. . . . The whole property was surrounded by a high wall, along which flowed the branch of a small stream which, doubtless, tempered the atmosphere and served as a carrier off of much undesirable material. The hospital ward itself was 55 feet wide and 270 feet long, and had a high, arched ceiling of wood. It was lighted by large, pointed windows high up in the walls. At the level of the window sills, some twelve feet from the floor, a narrow gallery ran along the wall, from which the ventilation through the windows might be readily regulated, and on which convalescent patients might walk or be seated in the sunshine. The beds were placed each in a little room formed by low partitions. Privacy was thus secured much better than in modern hospital wards; and, as there were only forty beds, the ventilation was abundant."

The reformation, which was a revolution, was disastrous in many ways to the work of the hospitals. Martin Luther himself complained that under the papacy generous provision had been made for all classes of suffering, while amongst his own followers no one contributed to the maintenance of the sick and poor. As a consequence, in Protestant countries, the hospitals were rapidly secularized. The Catholic church, meanwhile, though deprived of the necessary revenues, took energetic measures to restore and develop the hospital system.

Dr. Walsh, in his work, *The Popes and Science*, tells us of some of the problems of hospital work in the twelfth and thirteenth centuries. Pope Honorius, in approving of the union of two hospital foundations at Ghent, required that only a limited number of Brothers and Sisters for nursing purposes should be received, in order that the community expenses might not impair to too great a degree the resources of the hospital for its real purpose of taking care of patients. It had been decreed at Louvain that the number of nurses should not exceed one to nine patients; and that the attendants should be allowed only shelter, food, and clothing.

Dr. Walsh also remarks, in the same work, the sublime humanitarian work of the artists in their decoration of hospitals: "Bartilo's frescoes on the walls of the hospital at Sienna tell the story of the work that was done for foundlings and pilgrims as well as for the sick, in the early days of its establishment."

The first hospital erected in America was in the City of Mexico, by Cortez, in the year 1524, in gratitude for the graces and mercies which God had bestowed upon him. The first hospital erected in the United States was on the island of Manhattan, about the year 1663, for the reception of sick soldiers who had been billeted previously on private families.

The growth of hospitals in recent times is due, no doubt, to many causes: First, the growth of industries, and the expansion of city population; second, to meet the need of the laboring classes for hospital facilities; and, third, the advance of medical science, especially surgery.

THE COST OF MODERN HOSPITAL CARE *

AN EDITORIAL

By MORRIS FISHBEIN

The increasing furore relative to the cost of medical care is a striking exemplification of the way in which the average man concentrates on one phase of human life and forgets that all phases of human activity are related. In a consideration of recent economic changes in the United States by a distinguished committee headed by President Hoover, it is pointed out that the most striking characteristic of

* Reprinted by permission from the *Outlook and Independent*. January 1, 1930.

the last twenty-five years has been the expansion of human wants and an insatiable appetite for goods and services. Our people have become steadily less concerned about the primary needs of food, clothing and shelter, and more and more concerned about foreign travel, motoring, radios, motion pictures, and the consumption of leisure. The five-day week and the development of machines mean a vast amount of free time to be spent and have afforded new types of employment for numerous people who were previously engaged in agriculture and in manufacturing. Moreover, the last twenty-five years have seen the development of mass services and mass interests in a way never before known.

There has been a great advancement in the technique of medical diagnosis and medical care. In modern scientific medicine the old-time doctor who made a diagnosis on the basis of the history of the case, a look at the tongue, a record of the temperature, and a brief touch of the pulse, has no place. Neither is there room, under modern conditions of practice, for the hastily written, trite prescription, passed down through the ages as the sovereign remedy for cough, cold, rheumatism, or autointoxication. These empirical shotgun formulas are passing with the indefinite conditions they were alleged to cure. A quarter of a century has seen a greater advance in medical science than was witnessed by the previous fifty centuries. Today the microscope is familiar to every student of medicine. Although he may not have complete facility in their use, the competent practitioner realizes the qualities that lie in proper employment of the cystoscope, proctoscope, electrocardiograph, and the technics of blood chemistry. With the coming of greater exactitude there has tended to come also the coldness that seems to be the inevitable accompaniment of the introduction of the machine into industry. Moreover, the processes are time-consuming and expensive.

The rise of the great cities and the necessity for having easily available all of the accessories of the scientific practice of medicine have given impetus to the development of the hospital, the group clinic, and the commercial chemical and x-ray laboratory. Here already are attempts, through organization and coöperation, to distribute the overhead while retaining the personal features of the medical practice of an earlier day. Nevertheless, such attempts seem to have been insufficient or futile, because there arise—primarily from economists, sociologists, and philanthropists, but to a considerable extent from an unenlightened public opinion—demands for a decrease in the cost of medical care.

The statistics reflecting these conditions are of great interest. From 1909 to 1927 the number of hospital beds in the United States increased from 421,065 to 753,318. During the same period the efficiency of hospitals increased greatly, as shown by the fact that the number of clinical laboratories increased from 3,035 to 4,357 from 1922 to 1927, or 43 per cent; and the x-ray departments from 2,841 to 4,387, or 54 per cent. In 1927, 64 per cent of all hospitals had clinical laboratories and x-ray departments, and physical therapy departments were installed in 2,091 hospitals.

Hospital charges and costs have not increased greatly in comparison with all other costs. The degree of increase in commodity prices at wholesale in gold between 1913 and 1927 was, in the United States, 47 per cent. The average increase in hospital charges in four leading hospitals in Chicago during the same period was 66 per cent, as compared with an increase of 135 per cent in cost to the hospital; moreover, in 1913 the average stay in the hospital was fifteen days, as compared with twelve days in 1926.

The increase in hospital costs is represented by many factors. Whereas some three or four hundred nurses were graduated from hospital training schools in 1890, this year approximately eighteen thousand nurses were graduated; the cost of operating the training schools must be considered as part of the cost of hospital care. It is predicted that 65,000 nurses will be graduated in 1950. Whereas approximately one attendant was required for each person in a hospital in 1910, there are today from three to four attendants for each person in the hospital, including doctors, nurses, orderlies, staff clerks, laboratory workers, engineers, maids, cooks, laundry workers, and office employees. These also must be included in the cost of medical care.

The advancement in medical care is definitely associated with changes in the standard of living that have taken place in our country during the past twenty-five years. It is recognized that savings-bank accounts have decreased and that the purchase of automobiles and speculation have increased greatly. In 1910 there was one automobile to every two hundred and sixty-five persons; in 1917, one to every twenty-two; in 1919, one to every sixteen, and, on July 1, 1928, one to every six. Of the sales made, 38.6 per cent were made for cash and 61.4 per cent on the installment plan. Among manu-

facturers, merchants, professional men, and sub-executives the number of installment sales and cash sales were equal; but among salesmen, clerks, firemen, policemen, laborers and artisans the installment sales were to cash sales as two to one.

The doctor's fee is not the largest item in the cost of medical care. It is the one item that is revised downward, and by the doctor himself, to help the finance of the individual case. Hospitals, ambulances, anesthetics, nurses, and other fees are fixed, must be paid in cash, and most frequently in advance. The question for consideration, then, is not how to lower the cost of medical care by lowering the income of the doctor, but how to organize medical care so as to provide as economically as possible the highest type of service that can be rendered today.

The medical profession has not opposed and will not oppose legitimate experiments in the organization of medical practice with a view to lowering the cost of medical care. Hundreds of such experiments are being carried on today throughout the United States. The only experiments that have been seriously opposed are those in which the experimenters have violated all of the rules of the game and have taken measures that have seemed to the medical profession opposed to the best interests of the people and to the advancement of medical science.

Innumerable schemes have been advanced for lowering the cost of nursing care. The suggestions have included two-year courses of nursing, and even three-month courses of nursing; group nursing, whereby the service of a nurse is distributed hour by hour among numerous homes in one section of the city. Every attempt to lower the cost of nursing service by such methods seems to have met with failure, not because the service was inadequate, but because the American public has been trained in recent years to expect and to accept in medical care nothing but the best.

In their considerations of the cost of medical care, the physicians seem to have been continuously on the defensive. They realize, better than any one else, that the best medical care is a time-consuming, intricate, expensive procedure; that a commercialized, mechanized medical profession, whether provided by salaried physicians employed by business men or by corporations of medical men, will probably fail. They feel that a sincere and complete application of what are known as business methods to the practice of medicine would bring down on the profession a revolution beside which the current attempts to change the nature of medical practice would be child's play.

The problem of the future is the provision of the best medical care to all the people at a price that they can afford. The price that they can afford today does not seem to meet the cost. It therefore remains for some real economist to work out a plan which will guarantee saving and will make the average man realize that he will be better off if he has sufficient funds to pay for the care of his family in disease than if he has a motor car, a radio, or a piano in times of health.

DESCARTES WAS RIGHT *

By HARRY M. HALL, M.D.
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If ever the human race is raised to its highest practicable level intellectually, morally and physically, the science of medicine will perform that service.—*Rene Descartes.*

René Descartes, the French philosopher, was born in 1596 and died in 1650. Copernicus, Vesalius, and Chamberlen, the discoverers of obstetrical forcepts, flourished about the same period. The great names of that era were a brilliant galaxy, destined for deathless fame; but it is doubtful if Descartes looked out on an impressive medical profession. It is quite impossible to get at the animadversions of the modern medical mind without awarding a hasty glance at the past. Medicine certainly had moments in its other days reeking with sordid discouragement, shocking oppresison and insistent persecution. But, like the Jewish race and its Bible, it managed, in some way or other—milling, struggling, suffering, triumphing, bleeding, pleading, and dying often in martyrdom—to continuously develop the foundation on which it rests today. Its practitioners had to face vulgar, unspeakable quackery; absurd antics of sinister nondescripts; death for asserting the truth; crassness; idolatry; charms; amulets; absurd superstitions. If they succeeded, little reward followed; if they failed, torture and death. They pursued their profession, forced to mingle with toothless hags, itinerant barbers, withered soothsayers and vehement fakirs. Had they a passion for anatomy, they must work in a cellar, fearful of detection. Had they a love for the truth and were men of distinction, they must needs face their king—and the axe and the block was the reward for defending the fact that

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the heart beat and the blood circulated. What courageous men they were! What a fine faith! It should be enough to make us ashamed of our timorous actions, our wavering ideals. We look back casually and commiserate with them. Ah, it is here we make our mistake. Allow for relativity in time and place, natural improvement of all civilization, the intervening years, discoveries, inventions, and the like, and it is rather doubtful that we have any room for commiseration.

To take the fearful healer of the day of Descartes and compare him with the opulent doctor of today riding in his automobile to a magnificent hospital seems not only rather grotesque but absurd. Measured in terms of comfort, standardized living and ease of carrying on the medical artfulness, it may be ridiculous. Man does not live by bread alone, and, as we shall see, other trials no less disturbing hover over the modern doctor. These very comforts might be said to be the potions that fill the physician of 1930 with a sense of security he does not possess. In 1650 he well knew the trials of the hour. When it comes to certain problems that serve to perplex the medical practitioner of today, concerning his status among his fellow men, making of him either an individual or a member of a herd; endowing him with a certain self-respect or else assigning him as a mere cog in a great paternalism, describing him as a man or something akin to an industrial parasite, it is hard to believe that we are, just now, allowing for natural progress, any better off than we were then. The great determining factor then was to keep one's head on one's shoulders. Today it is to keep one's individuality and self-respect together. One is just as priceless as the other. That is why the Boston Tea Party was organized, and, as I take it, why we are here today, discussing this subject in the manner we are. We are not here for idle criticism nor for captious carping. We are here to face the facts.

If we speak the truth here, censure concomitantly will follow, but it will be as nothing compared to the realization that we have these adversaries with us to write about at all. The path of the essayist who would attempt to find the real causes of medical unrest is not an easy one. Perhaps he may be accused of bitterness; perhaps he may wound his friends; perhaps he may seem almost to bite the hand that has befriended him. That, I think, is why so little real progress has been made. Reluctance and distaste, some fear and not a little terror seize a writer as he meets in the beginning so much that is forbidding. The only comfort one can gather is to include himself at once in all the delinquencies as one who has been laggard with the rest.

Every editor and secretary here has doubtless experienced these sorrows as he has done his best to herald the clouds that appear to him as darkening the horizon of medicine. He has recoiled, too, with some distress and quite a little discouragement, as he has seen the continuous and deliberate disregard with which it was all met. Let him recall that there are people filled with want and distress who spend their last dollar at the movies in the attempt to have their minds distracted from the misery at hand. They all have hopes that on the morrow a job will appear. Just so, there are many doctors running hither and thither, up and down the country, attending medical conventions, where they listen to well-spun theories as to how the gallbladder is infacted, who do so to escape the grave economic and social problems which beset their professional lives at home and which have become so intolerable that they must seek surcease elsewhere in the vain hope they will hear unexpectedly some panacea for their woes. To their surprise, every subject and every disease is touched on save this one, which is by far more important in this day and hour than all else. To most of us, trained in scientific methods as we are, revivalistic methods are abhorrent. Yet we would that, out of all of our glossy self-confidence and hardened technical perfection, a figure with the great voice of a Napoleon, the compassion of a Lincoln, and the gentle persuasiveness of Jesus Christ, might appear to lead us out of our lethargy —our supreme illusion that "all is well."

The Jazz Age.—What is the cause, if any, of this calloused indifference on the part of so many medical men? Today, throughout the country, there is a situation which, for want of a better name, I shall call a "syndrome." Some of its characteristics are a waning faith in religion with nothing apparent to take its place; synethetic friendliness by way of service clubs; cynical disbelief in ideals as a form of flabby idolatry; substitution of planes and cylindroids for beauty; a gradual elimination of the older idea of the American home; translation of the former conception of love into frank terms of animal passion; complete breakdown of the ancient beliefs as to marriage and making it probationary by way of the divorce court; a denial that there is much in human relationship that is permanent, and that, therefore, personal contact is more or less a matter of transient importance; living from day to day,

forgetting yesterday and thinking not at all of tomorrow until it comes; seizing on what is offered with little or no examination of the probable insidious sources from whence it comes. Synchronized sensation is regarded as more important than a sense of responsibility. Finally, this is a mechanized age, and as machines have no conscience, there is no particular necessity for those who operate them to have any, either. All this is assembled, so to speak, thrown together and referred to as the "Jazz Age." Into this scene is thrown the modern doctor. We might paraphrase here the old, oft-quoted lines of Pope:

> Jazz is a figure of so repellant a mien.
> As oft to be ignored, needs but to be seen.
> But seen too oft, familiar with her face
> We first pity; then endure; then embrace.

Nearly every tradition of the physician is opposed to the syndrome of which I have spoken. He is by nature and education set against the credo of the senses. His calling directly involves ideals, faith, hope, and responsibility. He has carried on a certain belief of Hippocrates, who antedated Christ and whose oath slipped by the low estate of doctors in the days of Descartes and has come down more or less triumphant until yesterday, serving physicians as their rule of ethical conduct. The profession of medicine, by means of its ethics, imperfect and openly violated as they are, has built up a science and art as orderly as the progressive and complete one of nature in causing the chromasomes to flower into a human being. Suddenly, the syndrome appears, making its impress on all contemporary life. Old rules no longer hold in many things. The staid medical man finds life about him jumping over the stroma like a lot of cancerous cells, and development and progress a matter of carcinomatous revelry. The portraits of a Rembrandt are replaced by silly daubs that resembled those you made on scratch-books at school. Music of the immortals is transposed into nonsensical theme songs that savor of idiocy.

What has the medical man to do with a Jazz Age? He can not ignore it any more than the doctor of 1650 could shut the door in the face of a royal order. Some there are who will hide in the cellar or die before they acknowledge its presence. But, for most of us, there it is. To many, the Jazz Age applies to a wild dancing, singing, night-club existence. The syndrome I have related has no such connection. It applies to the life we all are living. So the syndrome has worked its way into the conduct of many a medical man, to the end that it has quite upset his outlook.

The best example I can give is that of the brilliant and well-educated opportunist who has multiplied many times in our midst the last few years. A quick survey of him is as follows: He says he must take any good contract if offered, regardless. He will affiliate with the schemes of a merchant prince if it gives him a little brief authority, and, if necessary, give the kiss of Judas to his profession. Flippantly, he remarks that the oath of Hippocrates has gone the way of corsets and that every man of preferment splits fees as a necessity, and that ethics, the golden rule and the idea of fair play are like Jupiter, Venus, Tannhäuser and the Valkyries—worn-out myths; that the idea of a gentleman's agreement is like Hell —spoken of but not believed in; that none of these ever got you a seat in the subway, a following of politicians, a lucrative position, or any worthwhile rewards. He feels the officers of his medical societies "play him for a sucker," to use the classic words of Texas Guinan, so why heed them? He attends a medical meeting now and then, on the way to some other engagement; but, as he is practicing surgery because internal medicine does not pay well, he will walk out immediately unless a surgical topic is being discussed. To do him justice, he is clever, brilliant, well-educated, and dexterous, and he carries through his operative work with a certain rather elegant poise, arrogant assumption and superb finish. His cures are not spurious and are exceptionally definite. From month to month, and by way of carefully planned advertising, he gains a great reputation and rides the crest of the wave. He becomes an Al Jolson in surgery. By and by, personality is substituted for science in his attitude toward his patients. He comes to believe it is solely on his own merits, and not by way of any medical organization, that he has reached where he is; so he assumes a tolerant air to all that pertains to medical solidarity. What does he need with anything outside of himself? He takes on any contract, gives testimonials for any product, commits any breach of etiquette, ridicules any of his contemporaries, and, in a good-natured way, says: "Well, what are you going to do about it? My clientèle won't let you do very much." He has become the superman. He proudly states he is "hard-boiled" to all that medical-ethics business, and has come to where he is despite it, because he gave people the kind of medical service they wanted. I shall not go into how this gentleman has paid, except to say that he is hard and brittle.

I fancy you all recognize this type. He is in almost every town and city. You must always acknowledge that his work is good, unless he becomes too intoxicated with himself and becomes careless. Doubtless, he is superb, brilliant, a credit to the science he is following. In social life he is known as a "corking good fellow." All he lacks is the spirit that Descartes indicated would make us the saviors of humanity. And, just because he lacks it and it is so all-important, I believe this type of man is directly responsible for a lot that besets us. I, in no sense, begrudge him his success. Such a man could have been equally successful by living according to rules and the ethics of his profession. It is the bad example he sets to others that I object to. A colleague battling along, trying to observe the finer graces and keeping his obligations to his contemporaries, faced with such illuminated competition is not likely to adhere to the perhaps slower method. He debates on going and doing likewise, and he usually does. So the idea has spread until it is now a well-recognized and prosperous schism. Internes in the hospitals compare the quick results obtained by the visiting men who affect such views, and it can be easily seen which road they ultimately take. So I reiterate that this ever-increasing type of man is the instigator of a great deal of the present situation.

The Crowd.—Years ago, Gusave Le Bon wrote a small classic called "The Crowd," a study of the popular mind, in which he held that a crowd can not be compared to the individuals that make it possible; that the mean average is probably of little value, as the new character of a crowd takes on new features and the new average is below that of the mean. One learns from Le Bon that a wide chasm may separate a great surgeon from an orderly, and yet, as to character, the more lowly one may be the better of the two; that men seem to take to the primitive in the mass, and that crowds may be composed of units spread out over a wide territory held together by a common emotion. All this helps in trying to understand medical assemblages. Doctors in their home environment may be individually men of great judgment and keen to see the dangers of the future. When brought together in the mass, however, they seem to take on rather childlike qualities, as may be seen by their restlessness, tendencies to run in and out, irritation over some mechanical error, and, above all, their opposition to an address pointing out to them the weaknesses in their non-professional outlook. Under the spell of a celebrated speaker or a well-known personage, I can think of no audience more quickly led than that of a group of medical men. This was illustrated the other day at Detroit, when the powers of the Interstate Post-Graduate Assembly conferred on Henry Ford the honorary title of Doctor before an audience of nearly 5,000 physicians. The crowd went wild and clapped its hands and shouted in childish enthusiasm. Mr. Ford stood smiling amidst a number of celebrated medical men, while Dr. Deaver, his picturesque personality all aglow, delivered the bestowal address. The industrialist said not a word, but bowed and retired from the scene as a mighty roar of approval followed. This idea is covered in Gustave Le Bon's book. Had any member, prominent or obscure, of that august gathering arisen and told this shouting crowd that they were about to award a great honor to one who had lately criticized their whole profession rather harshly in a series of syndicated articles, written on decidedly slender knowledge, and that in Detroit he had built a hospital to controvert directly the medical profession's idea of how a hospital should be run, and that in the medical fraternity in his city there was more than one doctor who felt decidedly hostile to his attitude—that member would have been summarily dealt with.

Mr. Ford is a great inventor who made a good car that has carried many a doctor efficiently to his destination. I doubt if Mr. Ford ever constructed his car as a benevolent gesture. But I should like to ask if Behring would not have been a millionaire if he had patented diphtheria serum? Would not Röntgen have been more of a Croesus than Ford if he had received $20 on all x-ray outfits and a royalty on the plates? Where would the man be who invented the vaginal speculum if he had patented it? What about Banting and a cent on every unit of insulin? Any one of these men could be where Ford is if he had said he chose to run that way. Always, we overlook our own great discoverers.

It may be that we are rewarded in Heaven for turning the right cheek when the left has been slapped; but, to me, the performance in the Ford case is merely an instance of playing the syncophant and has no merit. This brings me up to why we, as a profession, are so prone to do this. Let us once more go back to the past. I have reminded you of our precarious situation in the time of Descartes. Hippocrates and Galen may have been veritable mountain peaks in history, but the dark succeeding periods saw us consorting with barbers on about an

equal footing. Always, however, we had to depend on royalty or the rich and powerful for any advancement. In savage tribes, even the medicine man has to seek the favor of his chief. Always, as no other men have had to do, we have dealt with death. Since time began death is by far the greatest tragedy, and always the fighting of death has been our vocation. The demise of a kind or the exodus of a rich man has no elements of triviality about it to the populace. When death occurs, the doctor's, whether deserving of it or not, has been the only tangible head on which blame could be lowered. Oftentimes, in many scenes, the medical advisor has paid with his life. Doctors, like women, in the past had to learn to be subtle, shrewd, and in the end something of the syncophant in order to carry on. We have never really gotten over it. It has become a sort of hereditary matter which we feel as men in general hate the reptiles because their antecedents, the apes, feared the serpents. In the dim, distant past, if we moved too rapidly, some ignorant yet powerful segment of the population saw to it we were halted and punished, so we learned to respect and fear authority, power and money. It is true the doctor, along with the court fool, arose to positions of great power. But then the day came when the doctor told the king he had a four-plus Wassermann reaction in terms of the grand mal. The jester joked about it. The next day saw them both on the way to the guillotine.

If we have the courage to brush subterfuge aside and look at things squarely as they are, we will see we are exactly in the same position today, allowing only that humanity has sickened of the scaffold. There are two ways of being afraid of power and authority. The old way was fear of your life. The new way is fear for your position and self-respect and, in some places, your livelihood. None of us can be said to live in any abject terror of anything, perhaps; but close analysis will reveal almost all medical men exist with some sword of Damocles over them. I believe every medical man should acquire all of this world's goods he can. None of them will ever acquire a vast sum at his profession alone. It can not be done. I could scarcely do other than wish to every other man the attainment of all the great wealth he can honestly assemble. The great evil is that when some men acquire great wealth they feel it incumbent on them to try to direct and to influence great forces and organizations which essentially lie quite outside and beyond their knowledge, and certainly outside any such offices to control. Especially is this pernicious when it is extended into some technical or scientific realm where the disturbing factor can not possibly have the necessary intelligence or education to comprehend peculiar and highly specialized responsibilities which have been slowly acquired through the ages and at the high cost of experience and study. To do so strikes me as utterly indefensible, wholly uncalled for, gratuitously insulting, and designed ultimately to interfere with the orderly and natural progress of the given scientific activity and to contribute greatly to a destruction of its morale. Men are either leaders or are among the led. There are not many leaders. The medical profession especially has a penchant for the abject worship of great names and leaders. Now, wealth and power have developed many master minds, and in industry they are allowed to become well-nigh invincible.

Industry and Wealth vs. Medicine.—Life, it seems, has settled down into a strenuous contest between large groups, pretentious mergers, great communities and power in the mass. Industry and wealth has seen fit to pit its master minds against those of medicine. It is like a duel between two courageous men where one is a skilled swordsman and the other has nothing save his valor. In many instances medicine has come out with nothing left but its life. So we mostly stand aside when a battle is imminent. The country doctor feels the authority of the small-town banker. The general practitioner in the city is glad to join the Rotary Club. The specialist endeavors to placate the merchant to keep him from seeking advice in the metropolis. The great surgeon, who should have no peer, boasts his trivial confidences with well-known men of power. The head of a great group or clinic makes peasant-like obeisance in the hope of getting the millionaire to make an endowment that shall see his plant end in a big foundation. The instances could be multiplied. Medicine never had any real reason to bow to anybody. It never has, scientifically and as an art. We have carried the complex, hidden mysteries of a forbidding, tragic misdirection of evolution (if such it actually is) to as great a height as human experience could warrant. We can never be assailed for not making ten more talents out of the ten that were given us. Where we erred, from the beginning on, was in not realizing, if we were to fulfill our destiny, that there is more to medicine than just medicine. To have come to our fullest efficiency we should have conceived that there was a side to us that was in no sense medical. The steel corporation

is not in any manner devoted entirely to the fabrication of steel. Utilities are not concerned wholly with the making of light and power. Coal companies are more than just developers of coal. They have other thing to consider, one of which is medical attention to their employees. Their best minds are centered on organization, expansion and executive work for their enlargement and making them more or less impregnable—in short, monopolies.

We went along, confining ourselves to one thing —curing disease. We had an organization—nay, many of them—but they, too, were ordered to think of nothing outside of healing disease and increasing research. In an ideal world this would no doubt be the better way. But it is not an ideal world and human nature is what it is. Business and industry suddenly discovered it needed medicine. Heretofore it had paid little attention to it, regarding it as a personal matter. They saw health as the very keystone of the arch of all existence. No canal could be built where yellow fever raged; no steel mill was efficient when an epidemic kept half the men at home. Injured men were a big liability. People could not buy if harassed by illness. A king was not a king with a pleuritic effusion. No prospecting expedition could go forth without a medical advisor. A captain of industry was useless if agonized with a kidney stone. Great wealth and business found it had one enemy which was heedless of its power. They could not control it. So they set about to control the agency that came nearest to controlling disease—that was medicine. They had found the law receptive and the ministry weak. So industry met medicine on the highway of humanity, and the outcome does not need recital. Hospitals, medical colleges, research laboratories are today controlled not by medical men but by trustees and boards of wealthy laymen. By way of contracts, supervision is had over the manner of administration that hundreds of doctors perform. I could go on, giving many more instances, but the time at my disposal forbids. The present gesture is that men of vast wealth shall spend their declining years pointing out to us our delinquencies, lecturing us on our frailties, and essaying to make us over to their hearts' desire.

They speak to us of philanthropy—we that can be almost said to have invented it. They prate to us of social uplift. The only practical uplift today is by way of medicine. Our coöperation alone has made all social work possible. So far, other uplift work has been more or less of a failure. No scheme to reform criminals is effective, for crime is on the increase. No missionary work in foreign countries has made much progress for religion except in the places where hospitals have been included. The hospitals alone have made the natives better off and have been successful. Half the prestige our country bears in other climes is through the hospitals we have bestowed on them.

Henry Ford and Julius Rosenwald and many others may hold us up to scorn because commerce and invention—not highly original occupations—have seemed to pick them out as oracles. Yet both would resent being told by prominent medical men that the one had made several bungling engineering feats he had to do over, and once, on the witness stand, had to deny knowledge of articles that practically bore his name; whereas, the other has economically driven untold small-town merchants out of business, apparently without any thought of what was going to become of them. It seems to me that some large institution to provide these men having no occupation—business care at a lower cost—with some idea of what they were to do next, might be a fine piece of benevolence.

I regret to take up so much time with this sort of observation, but it seems to me that it is all done for a purpose—not as whimsical criticism or as mere talk, but as something in the nature of a threat. For hospitals and institutions are built which are placed in competition with those we happen to frequent, in order to bring us to terms. We are told, in so many words, either to begin to think in their terms or we will be forced to do it. That we have lost control of the agencies through which we accomplish what we do is largely our own fault. Had we stepped in and included executive, organizing, economic features into our calling as the great industries have appropriated medicine into theirs, we would now be perhaps the most powerful single group on the face of the earth. We hesitated; when we did come to adopt them in part, it was too late. Had we singled out highly capable men from our ranks, picking them out as does Standard Oil for their proficiencies, and then set them in the high places to do their utmost to make us the greatest human instrument for good the world affords, we would today be realizing to the fullest the prophecy of Descartes. We would control health—therefore, everything. They might call us a monopoly and a trust. I wish they could speak the truth when they said it. The burden of our song is that we are not. Our loose business methods, our promiscuous giving away of our services, our failure to effect complete

solidarity, our lack of vested authority at the top, has lost us the control of the places we work in, some of the selection of conditions under which we heal, and a great deal of prestige. We still control some of our future, and one of the reasons why we are here today is to talk over conserving what we still possess. We all think, I feel sure, that we can render just as good service to business outside of its control as under it. We can not be classed in as skilled labor and dictated to as artisans are proscribed, and then be expected to make the new discoveries and progress that is our heritage. We are not that kind of men, and most of us will never be. The hidden reserve of accumulated experience that is in us all needs special handling to do its best, and any attempt to dominate it as so much potential motion to be handled at will must end in disaster to all concerned.

The question arises, "Is it too late to go back to complete control?" It probably is too late. But the only way to find out is to investigate and see. There are no instruments of precision in such a case. There is a lot of buried, latent fight in every doctor—even in those who are under contract. Constant waging of war against disease puts some combativeness in every medical man. Physicians and surgeons are as universally intelligent to a certain degree as any other group of men in the world today. According to Gustave Le Bon, all they need is a common emotion to make them into one big mass which might be bent on a primitive lynching of a negro or on a grand and noble accomplishment like saving the honor and dignity of the medical profession. Let ever doctor, then, have the possible outcome brought home to him—and the possible outcome is always to be considered as state medicine. Let us weld ourselves into a big corporation, with a head after the fashion of Mussolini put without his defects, heedless of those who cry that the people will not tolerate it. That the people are against us is somewhat of a fiction. They care not, so long as we give the service. Explain to no one, realizing that explaining is a weakness if carried too far, and recalling the old statement that our enemies will not believe in us, whatever we do, while our friends need no explanation. There are many of us who are in for placing our heads in the yoke and accepting the whole thing as economically evolutionary. These men argue that the laymen run the hospitals better than we do. They would accept $500 under contract than a probable $1,000 they would not get. We shall never realize the prediction of Descartes by so doing, and it should be our aim to fulfill that destiny.

A few men control industry, so a few men will eventually control medicine if we meekly submit. It is scarcely likely, without an upheaval, that these few men would ever try to be despotic; but one of them could easily launch on a sea of propaganda against us with very distressing results. With a fancy that he had been cured by a fakir or an irregular of some kind, he might feel we ought to include the system in our own. Refusal might mean displeasure, and from such small acorns mighty oaks do grow. It is, therefore, the better way for humanity in general, that we keep the supervision of our own affairs.

To illustrate, in West Virginia contract practice is quite common, running in localities from 25 to 50 per cent. I offer no criticism of the corporations. They are out to obtain everything as cheaply as possible. The fault, if any, is that the organization of doctors in the state should have prevented it if they could and felt that it was dangerous. But they did not; so the responsibility is entirely on the doctors themselves. It seems apparent that part of the medical profession in West Virginia approves of contract practice, and it is probable that this is a fact. Its effect on the general profession has not been thought to be very important. Good salaries were originally offered and no doubt accepted with alacrity by the great and the near-great. Opportunity awaited and was swallowed as a fish accepts its bait. This did not matter so long as contract surgeons were in the minority, but when it reached a strong minority something happened. I feel that the same drama is being enacted in some fashion in every other state. As West Virginia is largely an industrial state, it happened to be more easily observed. The corporations felt that they could now handle matters with more decision. The inevitable happened. When a steel corporation or a coal company falls below their dividend requirements, as they see them, retrenchment speedily follows. Wages of the workers are cut, and, if not accepted, a strike or quitting are the only recourses. The contract doctor did not count on this to any extent. He simply felt he would not be included. I shall give three examples to show that he was mistaken. A young interne, on completing his service, found himself comfortably placed in the employ of a coal company at a check-off salary of $900 a month. Not so bad for a fledgling! Some time later, he was visited by an official of the company, who promptly told him he

could accept a cut of $600 a month or quit. He was assured a candidate for his place could immediately be secured for $300. Another older physician who had served some years received, if I recall correctly, $1.25 as a check-off for each married employee and $1 for each single one. He was told business was not so good, and he accepted $1 and $0.75. In both cases he received fees in addition under the workman's compensation act. He was next informed he must accept $0.90 and $0.60, give the company the fees, or resign. They informed him they could easily get a substitute. A third company secured a so-called medical director. He was instructed to tell all the medical attendants to accept $250 a month or resign. They could easily replace them.

If all this differs in any way from strike-breaking, I can not see it. Contract practice, as I said, is held to be by many as impossible of correction. Many believe it is an evolutionary matter, purely economical, and that it is the only solution of a difficult question. They argue that this is a machine age, and a machine knows neither freedom nor liberty. No less a person than Mussolini says both liberty and freedom are, in the last analysis, pernicious; that a republic is absurd and a democracy farcical, and that they will not live because, in the main, people do not know how to accept them, being made to be led. Contract, group, community practice and state medicine all follow this principle, in that they mean subservience of the several to a head or heads, who must necessarily assume some autocratic power. Of course, any doctor can quit at any time; but where will he go?

If, then, this idea of Mussolini is right—which is to say democracy is a failure—let us scrap all our ideals of the past, admit they are wrong, resign ourselves to the order of things and make the best of it. But if we do not agree with it, let us start a campaign of medical education with more force than any of the past attempts, assuring even the contract men that the next step the corporations will take is to shed their responsibility for medical care over onto the taxpayers, and then, to be sure, we will have state medicine.

Some of our more celebrated colleagues, who have reached places of safety at the head of something or other or who have amassed a fortune, usually by some route extraneous to medicine, shake their heads rather mournfully and say we are headed for state medicine. And, of course, we will be if we listen to them or follow their gloomy forebodings. If you believe literally that the meek shall inherit the earth, then the only consistent thing to do is to kneel down like the lamb to the slaughter. If you believe, with Roosevelt, that "Aggressive fighting for the right is the noblest sport the world affords," there never will be state medicine.

High Cost of Medical Care.—Because we deal with people only in times of stress and trouble—in other words, while they are ill—our sympathies are appealed to and we have been tricked into many false positions. The giving away of our services was one of them. The analysis can not be given here, but it can be shown that the responsibility for the care of the indigent is a responsibility of the remainder of humanity, and if we ever had any part in the matter, it is only our fractional part as a section of the population. But we have always had it all. By translating our services in the past into some heavenly abstract administrations, we steadily protested against the idea that medicine was a high-class, scientific commodity to be sold as is law, engineering, education, and every other human endeavor—and we made a mistake. We have had to reverse ourselves and come to that view anyway, and in doing so the public has been slow to understand us and we have been dubbed as "getting commercial." Our education was commercial. Our instruments and paraphernalia are commercial. All that we buy is commercial. Whatever we come in contact with is commercial. Why should we not long ago have come to the realization that we had "an opinion and its placing into practical application" to sell and act accordingly? The clergy have sold their "birth and death services" since time immemorial; no one thought the worse of them. It is true they will donate them at times, but there are exceptions where almost everything is found to be given away. Had we always charged for our services and had no systematized free services, no one would have ever heard of reducing the cost of medical care, for a way would have been found to have the poor's ministrations paid for by funds which would have also compensated the doctor.

The average cost of a bed in hospitals ranges from $4 to $6 a day. Those unable to pay at all make this rate as high as it is. Who is responsible for the poor? Certainly not the doctors. The medical profession had nothing to do with their poverty. It is the economics and chaotic living conditions of the outside world. But you will find the doctor has to answer for them when ill as if he were responsible for them. They can not obtain a livelihood,

so are not sheltered, fed or clothed. They, therefore, through lack of resistance, fall a prey to disease. No contractor gave them a house. No chain store gave them food. No mail-order house gave them clothing. No automobile dealer gave them an old car to obtain a little fresh air. No statesman worked out a solution for their maintenance with self-respect. No politician gave their plight a real thought. Mergers, combines and chain stores threw some of them out of employment. It was too late to get anything else. Flotsam and jetsam. What will be done with them? Shoulder them onto a hospital and let the doctors do what they can—but how? Free, of course. Up go hospital rates. Then critics dispose of us in sarcastic terms about the high cost of medical care. We think we have no part at all in the high cost of medical care. The outside world is responsible socially for the predicament of the poor. Particularly are the legislative bodies and the systems of commerce responsible. We need no elaborate figures or investigations or surveys to tell us that few doctors receive handsome incomes from their vocation. Outstanding surgeons possessed of great skill in some particular line may make big fees. The others do not, and there are men in the United States Survey who know this even better than we do. Had we collected our accounts and had no promiscuous free service, no one would have heard of the high cost of medical care. Our philanthropy was really the cause of our undoing.

Notwithstanding deflections from the ranks of those who hold to the old ethics, there are still many left. It represents something akin to the silent vote in politics. This great body of medical men is held together with a rather indescribable, invisible tie that, for want of a better term, I shall refer to as a "gentleman's agreement." It still is very much in existence and will probably be the saving grace of the profession in the time of extreme stress and trouble. This rather remarkable yet intangible force acts automatically, so to speak, in the last analysis, to defend the members of the medical profession against dangers from without. Some day or other—rather soon, I think—this element, rather reluctant to engage itself in conflict, will descend in full force on our notorious detractors and suggest they forget the high cost of medical care until they mitigate some of the preceding causes that lead up to it. Let some of them make instruments cheaper, x-ray outfits less expensive, and other paraphernalia within the bounds of moderation. We must teach the laity it is a dangerous occupation to heckle and disturb the medical profession, and that it is a tragic thing to clip our wings. Surely we must have had an efficient and wonderfully capable line of medical men in the past to bring so complex, baffling and obscure a thing as disease up to where it is today. Considering the tremendous amount of work required to establish every shred of information about illness and disease and make it conform to the major pattern of modern medicine, the medical men of the past must have been marvelously endowed. The future should be measured by the past. To make us into a mechanized group of robots would be disastrous. People may be standardized when well; they are all individualists when ill. A machine can not attend them.

Importance of Leadership and Loyalty.—The time has come for the medical profession to pick its leaders with great care. This will involve the rejection of great names as executive officers. Perhaps a way around it would be to create two presidents: one the chairman of a board, the other the regular president. One or the other could be made honorary. The head of a large medical organization should be a militant and aggressive leader, partaking of the qualities of a Roosevelt or a Mussolini without any despotic, autocratic qualities, although to an extent he should have a little of these. Great surgeons and internists, including the specialists, are not necessarily men of such stamp. In fact, they are often the very opposite. Usually they have a distaste for conflict, are given to conservatism, and can be found clinging to the thought that to yield is better and more peaceful. Having acquired wealth, fame, and almost everything else, they find the world smiling and agreeable. It is next to impossible to get them to recall their earlier days of privation. It is difficult for them to sense the problems of the modern rank and file. They are old warriors whose eyes have grown dim to the peculiar insults of the hour. They can not sense the struggles of the minor men of the profession. Contract practice and state medicine do not seem to them as anything but passing fictions of the day. Great industrialists, often among their patients, are good fellows and can not have any designs on medicine. They move in an atmosphere of pleasant relations, quiet regularity, and very little competition. Other medical men refer work to them; they are called on to address great assemblages; their words are considered the last thing in wisdom; men surrounding them look up to them; they travel, have their social conquests; statesmen, ambassadors, the great and near-great consult them;

life is surely very pleasant. It would be next to impossible to have them believe that, out in the open, doctors are being deprived of work, forced to accept reduced wages, are barely making a competence, are being crowded into narrower spheres, are ridiculed in the press and magazines, beset by trivial malpractice suits, having a struggle to preserve their traditions, and wondering whither they drift. The problems of the young man just entering medicine stand no more chance of being really understood in their stark and naked truth by these great men than did the fortunes of that other young man seem to have any advantages over the camels passing through the needle's eye. For us to venerate; for us to regard as still great teachers through experience; for us to love; for us to picture as making us scientifically what we are, they are still the old idols. But as to making them active presidents, executives, officers or directors, we believe that is neither wise nor practical. We have some of them now bursting into print with strictures on us which are at times more embarrassing than the laymen give out. Carrying enormous weight, the public counts on their statements as actually the gospel truth, whereas they are really only opinions of single men.

Great names in medicine often perform, heedlessly, great and small infractions of the principles of ethics which we are quite sure appear trivial to them, and so set a bad example to lesser men. Saint Paul probably made this clear in his dissertation on not eating what may be poison for the other fellow. When great medical men are solicited to testify to the great health-producing qualities of a cake of yeast or a baking powder, they should recall this. The lesser man would not be led to do a lot he does if he did not look on at the great and near-great doing it before he does. I believe vanity has a lot to do with it. A great medical man sometimes reflects on history and the dictum, "The king can do no wrong," and he forthwith appropriates the idea. This establishes a precedent, and down the line it goes to others who promptly feel that, if he can do it, then it must be all right. If enough do it, that particular part of the ethical code goes the way of the Eighteenth Amendment. Christ was led up into the mountain and offered the whole world to succumb. History records that he promptly rejected the offer.

A house divided can not stand. With our usual lack of foresight, we are dividing. The College of Surgeons, the College of Physicians, the Southern Medical Association, the Interstate Post-Graduate Assembly, and numerous other bodies give ample proof of this. Organized, I believe, for scientific purposes alone, they have not adhered solely to this idea. As an example, the American College of Surgeons exercises a control over hospitals. This implies that hospitals are solely surgical. We know this is not the case. It is a function that the American Medical Association alone should carry out. This is no criticism of the College of Surgeons as being officious. It may be they saw the need of it first, and they have handled it admirably. Nevertheless, it is not their duty. I am quite well aware that the argument is advanced that not all of the medical men of the country can gather in one place at one time; that specialists can not expect the American Medical Association to lend too much attention to their wants; and they, therefore, must have their own societies; and, since even the American Medical Association publishes separate archives to meet their requirements, it is just as logical to arrange separate meetings. The surgeons say they can not hope to discuss all their problems, even when by themselves for the better part of a week. The internists give the same reason. The Southern Medical Association doubtless has its reasons, while the Interstate Post-Graduate Assembly has a feeling it is fast becoming the largest single gathering of medical men that meets at one time. All these reasons are doubtless correct, and the profession of medicine requires all these associations. However, they are getting to have an uncomfortable habit of flourishing their power, extolling their size and referring to their accomplishments outside of their scientific realms. This is quite human and altogether natural. To those who are responsible for the brilliant performances of these strong and notable organizations, nothing but praise is perhaps due, and I am here referring to these courses solely as to what might happen. A great many medical men who fail to stop and consider realities actually gain the idea that these associations are somewhat competitive to the American Medical Association and not corollaries thereto. Capable of but a single allegiance, they pour out all their loyalty in one direction. It is impossible for them to brook any suggestion that there must, after all, be but one big, single organization to which we must look to settle our several perplexities. None of the members of these organizations can see any harm in too much division. To the most, they are stated as mere sideshows to the main tent. I rather gather that this is not so. It occurs to me that a separation into so many groups is dividing our forces—crystallizing our ready solu-

bility from one clear and potent fluid. We shall dilly-dally around with them until we become like a lot of Balkan states that never know just who is governing them and are destitute of a cohesive army and innocent of a navy, and are on the whole the very quintessence of impotency. And all of us should carry around with us constantly this thought: that if anything ever causes the fall of the American Medical Association, the demise of all of the others will quickly follow. Probably the American Medical Association should have a banner or a flag, and whenever any other medical organization meets it should be unfurled across the stage to remind the audience that "United, we stand; divided, we fall."

Increasing Complexity of Medicine.—The increasing complexity of medicine is the last subject with which we shall concern ourselves. It is in some ways the most important one of all. American life today insists on pursuing any subject until it is lost in its ramifications. The law makes the simplest case a maze of technicalities. An involved one runs into years with volumes of testimony. Religion, divided into many sects, has become such a labyrinthal matter that no one cares to approach it for simple comfort. Government, especially at Washington, has come near to defeating itself by the excess of its excursions. A tariff bill is an affair of months, an income tax blank too much for any ordinary man. Not so in the powerful and ever-increasing industrial scene, where simplicity is the outstanding feature. Thousands are spent to reduce the parts in a machine. Consider your telephone. Lose yourself in wonder over the arc light. Grow eloquent over your microscope.

Medicine is perhaps the most complex of all things. As is time and eternity, so is medicine; as is the geologist and his rock, so is medicine; as is the evolutionist and his story, so is medicine. It embraces all things, considers all things, encompasses all things. It is beyond one mind to fathom. It transcends all efforts to visualize it. To try and place into language the confines of its portentous schemes, its boundaries, its limitations, is quite beyond our efforts. To attempt to assemble some simple words that would correlate disease, its etiology, diagnosis, treatment and termination can scarcely be done; nor could a dozen men, each taking a division, contribute greatly to the elucidation. Medicine is a vast enterprise, a prodigious science, a very involved art. As a single physician gazes at a single patient before him, something of the stupendous phantasmagoria of medicine rushes before him. It can be well-nigh appalling, and it is well that disease is inclined to appear in a more simple form as commonly seen. But in that single patient before him, what dreams may come, what possibilities there are for all those other thousand maladies to bear down. No wonder the individual doctor lifts his eyes to that inverted bowl for counsel, to find it not. No wonder he seeks consultation. No wonder he gathers in groups. No wonder he assembles clinics. No wonder he rushes to foundations. Rebecca, in Ibsen's *Rosersholm*, killed Mrs. Rosmers by constantly suggesting to her the nature of her defects in meeting her duties. The wife jumped into the millrace. The enormity of medicine is killing off the single practitioner in the same manner.

I believe that it is generally conceded that one can absorb so much of a subject, after which the brain palls. In making our programs for medical gatherings, this is lost sight of entirely. So we have the spectacle of almost a week of addresses from eight until nine, with intermsisions for meals. Again we have the circus idea: three rings, and look at what you like. Few minds can retain what they receive in such a scientific festival. The span of life to most active men, as far as medicine is concerned, is doing well if it is forty years. As one stands almost like a child on the shores of medical life and gazes on the mighty seas of medical literature, medical knowledge and medical practice, no wonder one feels like a lone atom or a mere pigmy, a tiny unit in the cosmos. With medical societies multiplying; medical meetings in the city, state, country, and even abroad, on the increase; medical requirements born as were the leading characters in *Pigs Is Pigs*; rules, penalties, laws, standards, codes, tables, statistics, calories, calculations, tests of function, laboratory schemes, blood chemistry, biochemistry—is it any wonder one human mind, convoluted as it is, reacts in rebellion at the tremendous load? The logical result of all this is to give some doctors an inferiority complex. Many doctors die of cardiovascular disease, but the etiologic factor in the form of incessant worry that caused their malady was none other than the sense of inadequacy they gave up to, after realizing the utter vastness of their calling. Because we have all come to sense the unlimited confines of our vocation, many medical men are unwilling to trust to their individual judgment any more. This naturally leads to many consultations, in which there are specialists on many subjects. To obviate the spread, the group was created. The group likewise must fall back on men

from greater groups. Naturally, too, this contributes to the high cost of medical care. However, it results in no higher fee to the original physician. It is very evident that we can have too much discussion of a case, carrying it to where the perplexity is greater than ever, and the patient may die in the process. Dr. Butt, a West Virginian, once wrote a paper on gastrotomy in relation to a young man who had eaten frozen apples and cabbage and then drank water. In this, he remarked that had he held consultation instead of making up his mind individually to operate, the patient would have died. In numbers there is safety is undoubtedly true, but it has its limitations.

So medicine will have to be simplified. Its literature ,its nomenclature, its activities will have to undergo revision sooner or later. Physiologists and pathologists must bear a heavy load of responsibility in the next decade. It has been said the test of the medical profession in the future will be, "Is surgery still existent after fifty years?" If by that time we have not found the means to kill the pyogenic bacteria—streptococcus and staphylococcus—as well as the cause and the elimination of cancer, we will have suffered a grievous failure. If we can not reduce metabolism and biochemistry to more simpel terms, then, I would say, something is radically wrong with us.

Hospitals with a thousand beds, medical centers that look like mediæval cities, diagnostic clinics the size of hotels, laboratories that resemble railroad terminals, make us look like a vast enterprise. Some day simplicity will come like a tornado and level them all.

Conclusion.—In conclusion, I feel that this narrative must have sounded its share of discordant notes and revealed a melancholy outlook. I feel, as I end it, like the ghost at a feast. To arraign even lovingly the faults and failings of the profession we venerate breathes the air of ungratefulness. There is something unpleasant about the actor that plays the character of filmy nothingness. The part calls for a stalking grimness, a seeming lack of substance, a cold clamminess, and always one must be pointing —always pointing—at the foibles of the other guests, with a sort of bony finger from a hand that none can grasp. But ghosts have slain their Macbeths—although not directly. To have given some of the views of this recital has cost me some grief and sorrow, and not a little perturbation. Had I not had affection for over thirty years for the medical profession, and am ever jealous of its honor, I could never have tried to mirror some of my own inconsistencies. We must always to our own selves be true and be courageous enough to examine ourselves, as we are frank about confessing our errors in the performance of our duties. So I believe the several things I have related to have some part in our unrest. My judgment is anything but infallible, but there the matter rests. To us, the man to be feared is the one who says, "Always with a smile," and that all our ills will eventually right themselves. To us, he is an incubus.

We may be in for a period of partial eclipse; but, be that as it may, we can always count on enough hardy souls to effect a renaissance. We may be too deeply involved in some of our obsessions to extricate ourselves at once. We may see state medicine, although I strongly doubt it. We may see our hospitals, our work and our following taken from us and controlled by large units. I doubt that, too.

Notwithstanding the character of what has gone before, our great passion is that the medical profession, taking it by and large, is the greatest intelligent unit in civilization today. The purport of this whole paper is a deep chagrin at our not being the chief controlling factor in the world's affairs. It appears to me that we alone seem to understand the meaning of humanity. In modern dramas and in present-day literature it seems to me that it is the medical man, when he appears, who alone has a great compassion and understanding for all the other characters.

Picture a world, if you can, where all the doctors of today, ministering as they are at this very hour, were suddenly eliminated, and in their place were machine-like personages that sought from files and indexes the precise methods of approach, with personality eliminated. It is unthinkable. When the crucial time comes, if it ever does, I feel that the great medical solidarity will be found with capable leadership in the perfected organization of a greater and more unified American Medical Association; that industrial interference will come and go; contract practice appear and disappear, and state medicine attain a growth only to sicken like a weed. Medicine is too old a custom for anything to long stop its progress, arise what may, for nature and evolution, progress and civilization, have embraced medicine as a brother of their blood. You can no more block it now nor change its destiny than you can that of existence. Medicine has become a very member of the integral body of life itself. The martyrdom of all the great figures of its past has

seen to that. Concentrate on it as you may, it will ultimately appear unscathed, for there is something indestructibly valid about it. Unfaithful as some few of its follows may be to the meaning of its finer truths, all will subscribe to its authenticity. To those who have embraced it, some sense of immortality surrounds it. Hardened as any doctor may become to its altruistic prophecies, he never seems to lose a clinging sense of its subtle proofs of somewhere having a great destiny. What else can so subscribe? I know of nothing. So, on this rock we found our hopes and yearnings. Whatever happens, back we will come, stronger, more vibrant, more invincible, more powerful than ever, led, it may be, by some great voice from amongst us filled with the intense clairvoyancy of Descartes, and proving that he was right when he said:

"If ever the human race is lifted to its highest level intellectually, morally and physically, the medical profession will perform that service."

SODIUM AMYTAL *

By A. P. BUTT, M.D., F.A.C.S.,
AND
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The surgeon of today who is not acquainted with the different methods of anesthesia which research and experience are placing at the disposal of the medical profession is certainly greatly handicapping himself. The public is gradually becoming educated along this line and is more and more requesting anesthetics that cause less post-operative discomfort. Thus the *raison d'être* of local, regional, sacral, spinal, rectal, and intravenous anesthesia. Spinal anesthesia has been in use by one of us for over twenty years, having learned its use from Dr. W. W. Babcock; caudal anesthesia we have used for many years; trans-sacral anesthesia was learned from Dr. McCuskey of the Mayo Clinic. The anesthetic should fit the patient and not the patient the anesthetic. Our last anesthetic, just finished on an exhausted little tot of nine—a ruptured appendix—was done with a good deal of novocaine and a very little bit of chloroform.

Last summer, on our annual pilgrimage to the Mayo Clinic, we asked Dr. McCuskey if he had anything new in anesthesia, and he demonstrated the use of sodium amytal. The history of this recent addition to our stock of anesthetics is very interesting. In 1923 Shonle and Moment for the first time synthetized iso-amyl-barbituric acid, or amytal. Page introduced it physiologically. It was first used by mouth for its hypnotic effect and proved very effective, compared with the other hypnotics then in use. In 1927 this drug was used for the first time for anesthetic purposes, it being then used by rectum. It was soon found that this compound varied greatly in solubility and anesthetic potency. Experimentation revealed that the sodium salt is more soluble and, therefore, more suitable for anesthesia. This compound was used intravenously in the human subject for the first time by McCallum in the latter part of 1928 at the Indianapolis City Hospital. The first regularly scheduled major operative procedure in which this anesthetic was used was that of an extensive, ulcerated, septic, painful malignancy of both lips, right cheek, right maxilla and mandible at the Indianapolis City Hospital on September 6, 1928. It was more or less used as last resort to prevent using so much local anesthesia on this infected field—inhalation anesthesia was almost out of the question. The results were stupendous, no other anesthetic having been needed while the whole cheek, lips, and part of the mandible were excised with the electrocautery. Since this time Drs. Zerfas, McCallum and co-workers have continued their research work with this anesthetic in surgery, obstetrics, and also in many non-surgical conditions. The surgical cases reported so far in the literature are almost entirely confined to the city of Indianapolis and the Mayo Clinic. As far as we know, no cases have been reported in West Virginia.

Very recently sodium amytal has been furnished in pure form in a sealed, sterile ampoule containing 1 gm. of the substance and put up with a companion ampoule containing 10 c.c. of sterile, triple-distilled water, an arrangement which enables a 10% solution to be made freshly by gently agitating the mixture as the water is being added. This solution may be used by mouth, intramuscularly, by rectum, intravenously or intraspinally, though the latter route has been used so far only by Zerfas, who has used it successfully in over ten cases.

It is claimed that 20–25 mgm. of sodium amytal per kilogram of body weight will produce complete surgical anesthesia without the use of a supplementary anesthetic in most cases; that, under no circumstances, should more than 25 mgm. per kilo be used, and never should the maximum dose of 1.6 gm. or 25 grains be exceeded. In our series we have used

* Preliminary report of 46 surgical and non-surgical intravenous administrations conducted at Elkins City Hospital.

a much smaller dose—14 mgm. per kilogram of body weight—preferring to supplement the drug with some other anesthetic, if needed, rather than take risks when so little is known of the ultimate fate of the substance in the body. The 10%, fresh, absolutely clear solution was used and given at a rate that never exceeded one cubic centimeter a minute.

The series includes, at the present, 46 cases, divided as follows:

(*a*)	Surgical	31
	Thyroidectomies	2
	Appendectomies	5
	D. & C.	2
	Hemorrhoidectomies	2
	Pelvic Repair	1
	Salpingo-oöphorectomies	5
	Herniotomies	1
	Breast Amputations	1
	Dudley's Dysmenorrhea Operation	1
	Exploratory Laparotomies	2
	Removal of Ovarian Cyst	1
	T. & A.	3
	Fracture (humerus)	1
	Orchidectomy	1
	Plastic Hand Repair	1
(*b*)	Nonsurgical	15
	Pruritis from Jaundice	1
	Post-alcoholic Irritability	7
	Clonic spasms, undetermined etiology	4
	Delirium Tremens	1
	Hiccoughs	1
	Dysmenorrhea	1
Grand Total		46

In the surgical series, the following anesthetic combinations were used:

1.	Sodium amytal alone	1
2.	Sodium amytal and trans-sacral	1
3.	Sodium amytal, chloroform and ether	1
4.	Sodium amytal, novocaine and ether	3
5.	Sodium amytal and ether	24
6.	Sodium amytal and novocaine	1

In the surgical cases the patients went to sleep on the average of about three and a half minutes after the beginning of the administration. They did so almost invariably without any struggle whatsoever, often being right in the middle of a sentence when they would yawn and go to sleep like "the closing of tired lids on tired eyes." It was really interesting to watch this reaction. Only in one case did we encounter great resistance; this in a young boy of sixteen, who had his finger cut off by an axe. At the end of three minutes he became so restless and uncontrollable that one orderly and three nurses could not manage him so as to allow completion of the injection. We had to discontinue this and resort to chloroform, followed by ether. In one case, that of a very nervous young male schoolteacher, we encountered great resistance to the administration of ether. Enormous quantities were being used and the patient would not go to sleep and was cyanotic. Finally we gave him a dose of sodium amytal, which controlled him to the extent that we were able to finish the tonsillectomy with very much less difficulty.

Cases of curettement stood the operation without any additional anesthetic, though in one of them we gave novocaine trans-sacrally, anticipating more extensive vaginal work than conditions subsequently showed to be necessary. In all other cases we used some additional anesthetic. Invariably, quantities used were much smaller than would have had to be used if the sodium amytal had not been given. Often it required but a few drams of ether, and never more than a fourth of what would ordinarily have been needed. The additional anesthetic could be regulated for the times when more relaxation was wanted. Those operators who do not object to slight movements during operation probably would not use any additional anesthetic at all in many cases.

It was found that all the patients had a more or less complete loss of memory for all events from the time they went to sleep until long after the operation was over. Even the patient in whom the injection had to be discontinued does not remember anything about it. They slept from six to eighteen hours after the administration, and often remained drowsy for thirty-six hours. The cases had, of course, to be watched closely, for it is claimed that some of the patients swallow their tongues. So far, we have not been bothered with this complication; the patients, however, immediately on reaching their beds, were placed in Sims' position and uninterrupted nursing attendance instituted until they fully reacted. We noticed that in a good number of these cases, after sleeping soundly for eight to twelve hours, they would become somewhat restless. At times one would find a full bladder as the exciting cause, and relief of this would again make the patient sleep peacefully for hours. A small dose of morphia at

this time greatly relieves this restlessness and the patient plunges again into a prolonged, deep, uninterrupted sleep. It is to be noted that some of this post-operative sleep might be due to the drugs used in the pre-operative preparation for the sodium amytal administration, which will be discussed presently.

In the great majority of these cases there was no post-operative nausea and vomiting. Also, we found that the post-operative morphine administrations were greatly cut down, at times none at all being necessary. One of our patients went sixty-three hours before requiring a morphia injection. After the dose given just after the patient first reacts and becomes restless, often no more is needed. All of our patients, who have previously had other anesthetics with other operations, say that undoubtedly this is the most pleasant way to undergo a surgical procedure.

It was soon found that if the patient had a good pre-operative night the effects of the sodium amytal would last much longer and narcosis apparently would be deeper. We used several drug combinations to secure good pre-operative nights, *viz.*, sodium bromide with or without chloral hydrate, barbital by mouth, chloretone gr. X at night and again on morning of operation, and, if absolutely necessary, morphia. Perhaps the chloretone given at night and in the morning, followed by a hypodermic of morphia, grs. 1/6 or 1/4, and hyoscine, grs. 1/150 or 1/100, gave us the best results.

The cases at no time during the operation or after, perhaps with two doubtful exceptions to be discussed later, revealed any dangerous symptoms. The blood-pressure dropped in all cases in the first few minutes of administration, usually 10–50 mgm. of Hg., but soon began climbing again, and, at the end of the operation, almost invariably had practically reached its previous level. The pulse rate was increased 20–30 beats per minute and the respirations were regular, somewhat diminished in amplitude, and slightly increased in rate, as a rule. The common reflexes, except the pharyngeal and pupillary, were usually lost.

Two cases deserve special mention. The first was that of a female of forty-five, who came in complaining of a most severe pruritis from obstructive jaundice. She had been operated on May 16, 1929, and a gallbladder full of stones removed. The spells of pain never returned, but the itching, which began about a month after the operation, had become unbearable. She could scarcely sleep at all and was kept in continuous torment. She often couldn't eat, and her family thought she was going crazy with the condition. Everything in the routine category was tried, with only temporary relief, so finally it was decided to do an exploratory laparotomy to see what could be causing the obstruction of the common duct. The routine intravenous calcium chloride was given and operation scheduled. On the morning of the operation it was found that she had had a sleepless night. She begged us to go on with the operation, anyway, saying she would rather die than go on suffering thus. We, however, decided to postpone it until the next day and secure a better pre-operative night. At 8 P. M. of this night a dose of sodium amytal was given and a most excellent night was obtained. She woke up only at 6:30 A. M. From this time on she began to dread the operation and demanded that we give her another dose of sodium amytal so that she would not know when she was being taken from her bed to the operating room. She became so excited that at 8 A. M. another dose of the drug was given, and again sleep began in less than four minutes. In this condition she was removed from her bed and carried up to the operating room. Her abdomen was opened and an unsuccessful attempt made to locate the common duct, so great was the mass of adhesions present. Her pulse was so weak and general condition such that it was decided to close up the abdomen for this time and return her to the room. The pulse became weaker and weaker, respirations more and more shallow and finally Cheyne-Stokes in type; she became cold and clammy and, in spite of the usual stimulants, died four hours after completion of the exploratory laparotomy, without ever regaining consciousness. It is difficult to say what part sodium amytal played in this death. It was a desperate risk to start with, and the family had been so informed. We feel sure, however, that it was unwise to give the second dose of sodium amytal so soon after the first one.

The other case deserving special mention is that of a female of thirty-eight who came in complaining of intermittent attacks of cramping pains in both lower abdominal quadrants for the past four years. Examination revealed a left tubo-ovarian mass and right chronic salpingitis. She was of an extremely nervous type. Barbital, sodium bromide and chloral hydrate failed to produce sleep on the night preceding the operation, so that we had to use morphia, gr. 1/6, this giving her a fairly good night. On the morning of the operation it was thought advisable, due to her nervous condition, to give her two doses

of morphine and hyoscine, the first morphia gr. 1/4 and hyoscine gr. 1/100 was followed half an hour later by morphia gr. 1/8 and hyoscine gr. 1/200. Forty-five minutes later the sodium amytal was administered and produced profound sleep in about three minutes, though the patient was already drowsy from the hypodermics. She was prepared for operation and ether administration was begun. Hardly a dram of this had been given when she suddenly became very cyanotic and respirations stopped. Artificial respiration and adrenaline intravenously were quickly resorted to, and it was only after a few minutes that her breathing and color returned to normal. Soon after this she had another much shorter spell, after which the ether administration was perfectly smooth. It was noticed tha this was not a case in which the tongue dropped back, for this was always in its normal position ar there was a pharyngeal tube in the throat. The operation proceeded without any further mishap. The patient has no recollection whatever of these incidents, and her convalescence has been normal in every way. So many factors seemed to have played a part here that it is difficult to say what sodium amytal had to do with the above reaction.

In addition to its use in the above surgical cases and in the case of pruritis from jaundice, we have used the drug in four non-surgical conditions, with gratifying results. One was an intractable case of hiccoughs. The patient had been operated on for a ruptured appendix eight days previously. On the fifth post-operative day he developed a bad case of hiccoughs, which had lasted three days and nights, nothing, seemingly, doing it any good. We decided to try sodium amytal for this condition, and, to our great surprise, the man dropped into a profound sleep after only 3 c.c. of the solution had been injected, and slept soundly about six hours. He then awoke and began to hiccough again. The other remedies now were administered, including amytal compound by mouth, and these now controlled him more or less from then on to recovery. Review of the literature finds that Lundy, of the anesthetic department of the Mayo Clinic, reports using this drug by mouth in twenty cases of hiccoughs, with good results. If it did not relieve entirely, at least it brought the patient to the point where he could tolerate the carbon dioxide-oxygen inhalation and get results from this combination. Also, we find Lundy reporting good results from the use of this drug in 4-gr. doses by mouth for pruritus due to jaundice. He says patients often get relief for four hours from one dose.

We used the drug in a case of clonic spasms of the extremities and head, of undetermined etiology. The patient claimed to have had these since 1918, when in the front lines of France. At times they became worse and he couldn't sleep or hold objects still enough to partake of nourishment. We found here that none of the ordinary hypnotics—not even morphine and hyoscine—would secure sleep or stop the spasms long enough for him to secure some rest. We tried sodium amytal; he slept nine hours from its effects, during which time there were no spasms. The next dose, the following night, however, just secured two hours of restless sleep; so, on the third night, the dose was increased to one full gram, the patient weighing about 145 pounds. With this dose we obtained fairly good rest the following two nights, though once or twice supplementary doses of morphine and hyoscine had to be administered just as the patient was showing signs of becoming restless. It might be added that the patient used large quantities of alcohol in an effort, he says, to stabilize his nerves. He left the hospital in six days, much improved, but certainly not well.

The drug was again tried very successfully in case of post-alcoholic irritability. The young man had been an habitual drinker for years, and had recently tried to abstain from it, the effort having upset him considerably. Not even morphine and scopolamine secured rest and sleep for him. Sodium amytal was tried, the dose giving him eight hours of sleep. The second injection was not as effective, giving him only six hours of sleep, so the dose was increased to one full gram—the patient weighing about 125 pounds. Results were excellent, patient sleeping the whole night and until late in the morning at times. We would give it to him at night, leaving him awake during the day for nourishment, etc. After seven administrations, spread out, as needed, throughout ten nights, he got to where other hypnotics by mouth controlled him, and, finally, nothing at all was needed to produce rest or sleep.

In one habitual drunkard suffering with delirium tremens, the drug, in the above-mentioned dose, produced sleep lasting only forty-five minutes. In these acute attacks, nothing seems to do the patient any good at all.

The drug was used once for dysmenorrhea in one of our student nurses. She suffers very much with menstrual cramps on the first day of menstruation,

often having to go to bed. A dose of sodium amytal was given once just as the cramps began. She slept soundly all day and was drowsy until the next morning. By the next day, the flow was well established and there was no more pain.

Conclusions.—It is evident that this anesthetic has disadvantages, just as all other anesthetics have. We have not found the ideal anesthetic yet. The relaxation obtained is not all that could be desired; not much is known of how the drug is excreted from the body; the patients to whom this drug is administered are liable to swallow their tongues and also can not tell us about complications, making it necessary for prolonged and continuous nursing vigilance; also, if an overdose is given, it will be hard to combat it, though it is said that 25–50 mgm. of ephedrine sulphate intramuscularly, followed by 0.65 to 1 gm. of caffeine and sodium bonzoate intramuscularly, will greatly counteract the drug.

Our series is as yet far too small to be of much value to others. We do feel encouraged to continue its use. The above cases have justified the following tentative conclusions:

1. Sodium amytal has a very definite place in anesthesia, especially in the nervous type of individual who dreads operation, and also in those operations where inhalation anesthesia interferes with the field.

2. Until we know more about how the drug is eliminated, and some more thoroughly effective and quick antidote is found, we will not use it except as a basal anesthesia for major operations and as the sole anesthetic in selected minor operations.

3. There are certain non-surgical conditions in which sodium amytal seems very useful, indeed.

CORONARY OCCLUSION *

(*With Reference to Four Clinical Cases*)

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For years the end results of occlusion of the coronary arteries have been noted by pathologists at autopsy, but a careful study of the symptomatology of this serious condition has, within the past decade, enabled us to diagnose it with a reasonable degree of accuracy during life.

The coronary arteries were formerly considered as end-arteries, but it has been conclusively proven that some collateral circulation will be established in most, if not all, cases where occlusion of the artery takes place gradually.

Gross called attention many years ago to a great variation in the distribution of the coronary arteries. Sometimes we find only one, and occasionally more than two; but the main coronary arteries, the right and the left, are by far the most common—and the left artery is of particular importance here because it is involved in more than three-fourths of all cases of coronary occlusion.

It is only intended that cases of slow narrowin of the arterial lumen, and sudden thrombosis a embolism with marked cutting off of blood supply and actual infarction of the heart muscle, shall come within the scope of this paper.

Herrick classifies coronary occlusion as follows:

1. Cases which die suddenly.

2. Cases in which severe anginal pain and shock are followed within a short time by death.

3. Mild non-fatal cases, which are difficult to diagnose.

4. Cases in which symptoms are severe, which may or may not be fatal.

The onset in typical cases is spectacular. The patient may have undergone a serious mental or physical strain. He may have eaten a heavy meal, or may have been at rest or even asleep, when all at once he cries out with pain, which is anginal in character, precordial and substernal, running down the left arm and sometimes the right arm. This pain may last for hours or days, and may not be relieved by morphine.

Many of the patients, especially a few hours after the onset, will complain of pain in the upper abdomen. This, accompanied by nausea and frequent vomiting, muscular rigidity, tenderness, temperature from 99.5 to 101 degrees, and a moderate leucocytosis, has many times in the past led to erroneous diagnoses of acute abdominal lesions, operations for the relief of which were frequently fatal.

If the patient is stricken with an attack following a heavy meal, or even after a moderate meal, his case is often diagnosed as acute indigestion. If the a good physician saved his life by the use of a lot patient dies, his "indigestion" killed him. If he lives. of depressing emetics, the stomach tube, etc. This treatment is all right, provided the patient has ptomaine or some other form of food poisoning; but we do not believe that acute indigestion kills normal men and women. The term is used as a burial ground for mistaken diagnoses in such cases.

In reality, the patient may have had a weak

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myocardium and atherosclerotic arteries; he was a good subject; he ate a pretty good meal; a gaseous, distended stomach encroached upon the territory of a weakened heart, a coronary artery became occluded and the patient died—not from acute indigestion, but from acute dilatation of the heart.

With the onset of acute dilatation the patient becomes very restless, with marked dyspnea, cyanosis and pallor, giving the face an ashy-gray color, with beads of perspiration standing out on the forehead, and the entire body is found moist and clammy.

In angina, instead of being restless, the patient stops still and is rigid during the attack; he is afraid to move; there is pallor, but no cyanosis, and the pain is of short duration. In an occasional case, however, the face will be flushed; yet there is no rapid fall of blood-pressure, with a fast, thready pulse, in angina pectoris, while this finding is almost constant in coronary occlusion.

The most constant symptoms of coronary occlusion are pulmonary congestion and edema. All cases, even the milder ones, will show moist râles in both bases posteriorly. In two out of four of the writer's cases, acute pulmonary edema was present, with profuse moist râles over the entire surface of both lungs and with a persistent "cardiac cough" and expectoration of blood-tinged mucus. This cough, so seldom mentioned in the literature, was the most constant and annoying symptom encountered in our series of four cases. Shock is always present in varying degrees.

On examination, many will show valvular lesions of the heart or chronic myocarditis, and all cases have atheromatosis or atherosclerosis of the entire arterial system, or the arterial changes may be confined to a group of arteries or to one or more organs of the body. Therefore, the blood-pressure at the onset of an attack is above normal in almost all cases, but with the onset of pain the pressure rapidly falls until the patient, with an anxious, pinched expression of the face, beads of cold perspiration on the forehead, dilatation of the pupils, and a fast, weak, and sometimes irregular heart, passes into a state of shock. The slow, weak, regular or irregular pulse has been observed in occasional cases by Sutton and others; but all of our cases of coronary occlusion presented a weak, rapid pulse. In one of them the cardiac impulse could be felt with difficulty, and the apex beat could not be determined by palpation.

More or less cardiac irregularity was observed in the entire series, and marked auricular fibrillation observed in two. These patients are extremely weak and nervous, and have a sense of impending death. In fact, the weakness is so much in evidence that it appears to be all out of proportion to the physical signs.

Pericardial friction sounds, according to Mackenzie, Herrick, Wearn, and others, are usually found at some time in the course of an attack. We have heard the friction rub in only two of our cases. Infarcts involving the anterior wall of the heart are easier to diagnose by the friction sounds than those occurring elsewhere in the heart. If the infarct involves the right ventricle, thrombi often form in the cavity of this ventricle from which emboli are sometimes thrown into the lungs, causing pain in the chest, bloody sputum, embarrassed respiration, cyanosis, and even death. This accident is often the cause of sudden death many hours or days after the onset.

If a thrombus forms in the left ventricle, emboli are carried to the kidneys, brain, liver, spleen, extremities, etc., the symptoms depending, of course, on the organs or parts involved. For instance, if the emboli reaches the kidney, we have sudden pain followed generally by hematuria. If the brain is involved, paralysis, aphasia and other like symptoms would be observed. Cheyne-Stokes respiration is observed in some cases, often as a terminal symptom.

From a diagnostic standpoint, the electrocardiogram is of utmost importance. In coronary occlusion we have an inverted T-wave in leads one and two; but in angina pectoris it fails to show any definite findings in a majority of cases.

The causes of coronary occlusion are those of general atheromatosis and arteriosclerosis. While it is sometimes found in patients under forty years of age, it is essentially a disease of later life, between forty and seventy years.

We do not know why certain families through successive generations are subject to cardiovascular disease; neither do we understand why certain individual types are subject to certain diseases. Focal infection, hard work, worry, the excessive use of alcohol, tobacco, coffee, tea; heavy eating, especially of an unbalanced diet, are considered as causative or contributory factors by many observers. On the other hand, we occasionally see patients with diseased arteries who have apparently led temperate lives and had the best of habits. Heredity here seems to play an important rôle.

Syphilis is not considered, by most observers, either as a common cause or an important factor in coronary disease, though its degenerative influence on the

cardiovascular system in its passage through several successive generations should not be overlooked.

The prognosis of coronary occlusion is not good. If a patient lives through an attack and is fortunate in escaping the disastrous results of embolism, he may go on in comparative comfort for several years, provided he slows down and takes the very best care of himself. The morbidity and mortality are both high, estimated by some authorities at 70 per cent as compared with 45 per cent in angina pectoris—an estimate hard to certify from literature and records at hand.

This urgent condition calls for energetic treatment. Morphine is given in large doses, but it often fails to relieve, even in massive doses. Nitrites and other vasodepressants are contraindicated on account of the rapid fall in blood-pressure. Pulmonary edema and persistent "cardiac cough," which seem to be the most urgent symptoms calling for immediate relief, were treated in our cases by the hypodermic administration of large doses of codein sulphate (¾ to 1½ gr.) with 1/100 grain of atropine sulphate, and repeated as indicated in each individual case.

In our hands, atropine, in drying up fluid in the lungs resulting from pulmonary edema, has been the most important remedy, and while we find in the literature little or no authority for its use, we believe it is the best remedy we have at hand to be used at the onset of an attack, especially when combined with codeine or morphine. Atropine also raises the blood-pressure, and in cases where digitalis is indicated it does not interfere with the slowing effect of the latter drug upon the heart.

For the shock and pain, the careful use of morphine seems to be indicated; but, when asked how he feels, the patient says, "This pain is different." He cries out, "Oh, doctor! I can't get my breath. I feel like I am going to die." If the pulse is weak and the patient bordering on collapse, the hypodermic administration of adrenalin, camphorated oil or caffeine sodium benzoate may be indicated. In all cases where the pulse is fast and weak and the blood-pressure low, digitalis is indicated whether the pulse is regular or not. In urgent cases it may be administered intravenously or subcutaneously, but in most cases it can be given by mouth. These patients should be digitalized with care and under close observation. In cases of coronary occlusion, where the heart is slow and weak, digitalis is contraindicated because it may cause heart-block and death.

According to Levine, Warfield, and others, quinidine sulphate has been used in large doses, ranging from 10 to 15 grains every four hours for four to six doses, in the alarming ventricular tachycardia sometimes encountered in this condition. We did not use quinidine in our series, while in certain selected cases, and in carefully regulated doses, it will, in our opinion, give good results; but the drug is not free from danger, especially when we ar dealing with a badly diseased and infarcted myocardium with profound shock and low blood-pressure.

The ice-cap, as a rule, does no good in these cases, and may do harm. The patient is already cold and covered with a cold perspiration, and, instead of applying the ice-bag over the heart, we wrap the extremities in warm blankets and apply hot-water bottles to the feet and legs. Complete rest is of most importance during, and for weeks and months after, attacks. When the patient is well on the road to recovery, he should be instructed to get up gradually and to avoid active exercise and sudden movement of the body or anything that would throw a sudden strain on the heart and blood-vessels.

THE ECZEMA PROBLEM *

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Not all dermatology concerns itself with polysyllabic rarities of small moment to medicine as a whole, or with the minor surgery of cosmetic blemishes. Within the field lie some of the crippling ills of mankind. Eczema, in certain senses of the term, is one of these, and to its study at this moment a generous share of energy and brain power is being devoted. It evidently occurred to your secretary, as to me, that you would be interested in a statement of our present position in regard to this problem.

First, let me attempt a redefinition of the term *eczema* in line with current conceptions of the trend of dermatology away from the purely descriptive toward the more fundamentally etiologic viewpoint. Eczema is a dermatitis, a catarrhal cutaneous inflammation in which exudation or secretion of fluid is a conspicuous feature. Does this quality justify the separation of eczema from the multitude of other forms of dermatitis? I believe not. Inflammation, with its fundamental pathologic reaction signs, is

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simply a form of sign language, a cry of protest, aroused by etiologic stimuli, and in the end classifiable best on the basis of the stimuli, rather than, figuratively speaking, on the minor tonal and pitch variations of the cry. Before defining eczema, then, let us attempt an etiologic definition of dermatitis, for the causes of dermatitis embrace those of eczema. A dermatitis is a cutaneous inflammation aroused by the interaction of two groups of causes, constituting a foreground and a background of the picture; predisposing causes, largely in the constitutional background, and exciting causes, the immediate usually irritant accidents or contacts. The exciting cause, if I may quote myself and change the metaphor, acts as the trigger pull to the already existing load of predisposing causes, and the result of that interaction is a cutaneous explosion in some one or other of the many inflammatory forms, ranging from hives to eczema.

It follows, then, that a thoroughgoing and sometimes highly complicated analysis must precede the therapeutic decision in each individual case of dermatitis, if lasting good results are to be secured, in the effort to unravel the interaction of predisposing and exciting causes and to apply the proper treatment to each. In order to assist my students in this process, I have prepared an analysis of present knowledge on this subject, given in the body of this text. In a sense this analysis constitutes a species of desk card, against which the case before one can be analyzed as the patient is questioned and studied.

THE CAUSES OF DERMATITIS

I. *Two Groups. Predisposing causes*, which form the constitutional background, on which dermatitis develops, and *exciting causes*, the immediate, usually irritant accidents which precipitate the cutaneous explosion, acting as a "trigger to the charge of predisposing causes."

II. *The Predisposing Causes.*

1. *Race.* Blonds predisposed. Neurotic racial strains.
2. *Age.*
   - (*a*) *Infancy and Childhood.* Predisposed to the allergic eczemas, the superficial pyogens, the exanthems, the scalp ringworms, animal parasites.
   - (*b*) *Prepuberal and Puberal Years.* In addition to the above, the seborrheas, psoriasis.
   - (*c*) *Young Adult Life.* The epidermophyton ringworms of feet, groins, hands, seborrheic dermatitis, lymphomatosis.
   - (*d*) *After Thirty-five Years.* The occupational dermatitides, eczematoid dermatitis, seborrheic dermatitis, cutaneous neuroses, lymphomatoses.
   - (*e*) *After Fifty Years.* Involution dermatitis, a complex of decreased elimination, accumulating infections, nervous overload and so forth.
3. *Infection.*
   - *Focal.* Teeth, tonsils, sinuses, appendix, bronchiectatic conditions, gall bladder, colon, prostate, cervix.
   - *Systemic Associations.* Intestinal parasitism (ascaris) and dermatitis, variola and pyogenic infection, streptococcal and staphylococcal septicemia and the purpuras, toxic erythemas and erythema multiforme group.
   - *Local.* Abscesses, draining sinuses, suppurations, etc.
4. *Parasites.* Pediculosis, scabies, postscabetic sensitization. More rarely, mosquitoes, bedbugs, straw-mattress mites, fleas, chiggers.
5. *Neoplasms.* Lymphomas, leukemias. Various neoplasms, through invasion of the liver or obstruction of the biliary tract, with the production of jaundice.
6. *Abnormalities in Blood Chemistry.* While much studied and theorized about, abnormalities in blood chemistry are few in dermatitis and of doubtful etiologic significance. This includes sugar chlorids, uric acid, non-protein nitrogen, and calcium. Photosensitive substances; hematoporphyrin the only known example.
7. *Disturbances of Diet.* High carbohydrates especially; rest and exercise.
8. *Disturbances of Intake-Output Ratio.* Metabolic effects of overeating, underexercise, and waste retention (nephritis, constipation).
9. *Gastrointestinal Disturbance As Such.* Hypochlorhydria and achlorhydria, colitis, colonic and intestinal stasis, spasm and spastic disturbances.
10. *Excessive Sexual Activity and the Puberal State.* Pyogenic and seborrheic lesions.
11. *General Sensitivity.* Indefinable by our present knowledge. Due to proteins? Histamines? Bacterial decomposition products? Intestinal disturbances? Vagotonia? Vasomotor instabilities? Pluriglandular syndromes?
12. *Nervous Overload and Disturbance.* Including sexual complexes, inferiority complexes, anxiety neuroses, and so forth. Acts through:
    - (*a*) Endocrins (thyroid and adrenals).
    - (*b*) Vasomotor mechanism (rosacea, urticaria).
    - (*c*) Sympathetic-vagus system (urticarias, rosacea, neurogenous dermatitis). Includes action on digestive secretions, intestinal peristalsis, etc.
    - (*d*) The sensory mechanism of itching (unknown).
13. *Endocrin Abnormality As Such.* Low basal-metabolic rate. Hypothyroidism. Menstrual disorders, especially amenorrhea.
14. *Cutaneous Dystrophies and Functional Abnormalities.*
    - (*a*) *The Ichthyotic State.* Dry skin, slightly scaling forehead and scalp, pretibial region, follicular plugging of the extensors, parchment palms.
    - (*b*) *Seborrhea.* Hyperactivity of the sebaceous glands. An endocrin background (?).
    - (*c*) *Hyperidrosis.* Perspiring palms, soles, scrotum, axillæ. A "sympathetic" neurosis (?).
    - (*d*) *Vascular stasis.*
      1. Vasomotor (rosacea, blue hands and feet, and so forth).
      2. Mechanical (varicose and thrombotic).

III. *Exciting Causes.*

1. *External Irritants.*
   - Occupational contacts.
   - Drugs and medicaments.
   - Chemicals.

Cosmetics.
Vegetable poisons (Rhus, and so forth).
Light, heat, and cold. Mechanical agents (friction).

2. *Allergy-Producing or Exciting Agents.*
   (*a*) Specific. Food and other proteins, pollens, plants, animal products (hair, fur, and so forth).
   (*b*) *General.* Serums, bacterial toxins, vaccines.
3. *Infections.*
   (*a*) Ringworms (dermatophytids, in which the organism is not present).
   (*b*) Streptococcus and staphylococcus infections, local and general.
4. *Parasites.*
5. *Trauma.*
6. *Nervous Shock.*

If, then, etiologically speaking, this be dermatitis, what is eczema? Over this question, which brings to a focus all the problems of direct and indirect etiology, the battle still rages. A powerful and extremely modern group, with whom, it must be conceded, rest many of the laurels of distinctive scientific achievement, insists that extrinsic or exciting cause, and not constitutional background, is the etiologic force and fact in eczema as it is in dermatitis. There is, therefore, according to this group, no difference between eczema and dermatitis, etiologically or pathologically. A second group, for whom Pulay has been a recent spokesman, insists that eczema is fundamentally a constitutional disease, and that, whatever the exciting cause that may be unearthed, it reacts upon an essential and indispensable susceptible background. Moreover (and here is the crux of the issue), an eczema persists and may extend, it is contended, even after the removal of the determined exciting cause—the best evidence of the potency of the constitutional element.

After all, it seems to me, both groups are in a sense right, and that the apparent disagreement is more a matter of relative emphasis than of fact. A compromise position can be stated which allows both sides their due. I, therefore, for the purpose of discussion, define eczema to you as:

"A form of dermatitis in which the constitutional background has come to outweigh the exciting cause, though both are present at the outset, and may continue present throughout the picture."

On the other hand, as Pulay puts it, irreversible changes may occur in the skin, or it may be so predisposed by the patient's inherited constitution that the dermatitic process is perpetuated as eczema, even after the withdrawal of the extrinsic exciting cause.

Crudely speaking, one may illustrate this difference by example. A given person in ordinarily good health may sit down in or handle poison ivy, and develop the typical picture of a dermatitis venenata, which subsides under ordinary soothing treatment in ten days. A second person with a background of predisposing causes develops poison ivy under the same conditions and at the same time, and in his case the process not only does not subside in ten weeks instead of ten days, but it spreads to other parts of his body, which have had no contact with the irritant oil as such. Months after the removal of the exciting cause he is still suffering from extensive patches of eczema which respond, if at all, only to measures that fundamentally change not only the physicochemical background of his skin by the autonomic-sympathetic balance of his nervous system, the cellular reactions of his body tissues, the behavior of his hematopoietic system, the reactions of his gastrointestinal tract, and even his whole outlook on life. In the process of readjusting this fundamental constitutional background, everything may have failed until, with the extraction of an infected tooth, the drainage of an antrum, the removal of an infected gall bladder, or the reëducation of the patient with respect to a mother-in-law, the whole process has begun to mend, and has stayed mended so long as the individual remains in balance with his predisposing background. He may remain susceptible to poison ivy, but an attack will clear up comparatively rapidly until his constitutional ledger again shows a debit. Then he will have another seige of "eczema," to be dealt with in the same way.

I am sure it will be apparent to you, then, that the study of the etiology of eczema will carry us far afield, into a variety of medical problems, among the foremost of which will be those of allergy or hypersensitivity, in which so many important advances have been scored in the last few years by Jadassohn, Coca, Zinsser, Doerr, Bloch, and their students and co-workers. There is a tremendously convincing quality about a demonstration such as the Prausnitz-Kustner or the Walzer technique of predicating the presence of an antigen in the blood serum of the susceptible individual responsible for an interaction between the offending external substance or cause and the patient's tissues; an antigen which has the highest degree of specificity for the incriminated substance. Such demonstrations rightly give the claim of the "externalists," who insist that every dermatitis and eczema has an extrinsic cause, a remarkable degree of force and convincing quality. Under the influence of this school of thought innumerable substances, toxins, organisms and contacts have been found to produce dermatitis and to

underlie what had previously been regarded as eczema of exclusively internal or intrinsic causation. Today, the list of exciting causes which the conscientious and well-equipped dermatologist must be prepared to hunt down in any given case ranges from the ink of the Sunday rotogravure supplement and the celluloid rim of the eyeglass to the hair of the son's pet guinea pig, the fungus between the patient's fourth and fifth toes, the plant on his dining-room table, the seasoning in his soup or the roundworm in his gut. One look at a rubber shoe heel containing hexamethylene as a catalyzer will send the workmen of a factory into frenzies of dermatitic protest. Steam-distilled is alleged to differ from old-fashioned turpentine. Though a man may not, by Holy Writ, live by bread alone, it appears that he may have eczema by it alone and fill the columns of the German literature with dissertations on bakers' dermatitis. Though I seem to use a facetious tone, I say, in all sincerity, more power to the discoverers of exciting causes. They have at least convinced us of the eminent worthwhileness of determined search of the visible and contact world for the explanation of a dermatitis or an eczema. Such a search should always be made before we proceed to appraise the internal, the invisible, and the as yet to some extent speculative elements which go to make up the constitutional background suggested as the line of differentiation between dermatitis and eczema. On pain of being declared lazy, then, let us not neglect the thorough search of our patient with eczema for the external causes of the dermatitis which afflicts him.

But shall we stop there? Is there not something suspicious about this amazing accumulation of external irritants which will set some one somewhere into cutaneous spasms? Is it in keeping with our general knowledge of the plastic interaction that occurs between parasite and host, between donor and recipient, between this human protoplasmic gel and the agents that creep and crawl across it or push and prod against it, that there should be no internal predisposing reactive mechanism to be studied in connection with the effect of an irritant coming from without? Is it not conceivable that study of the reactor may disclose a non-specific as well as this startlingly specific mechanism of reaction which has so usurped our recent attention? To this point of view the eminent British student of occupational dermatoses, Prosser White, I think it was, led the way in linking to the local effects of industrial irritants a systemic predisposing background, including therein the effects of age and worry and of the seborrheic makeup, grounded as it is in the carbohydrate metabolism. To these more obvious elements the school of Kreibich and such observers on the neuropsychiatric borderline as Sack are adding a neurogenous background. The studies of Klauder on the calcium-potassium balance in its effect on the vagus-sympathetic system, while still on chemically unstable ground, are giving some elements of tangibility to the hypotheses centered around that *terra incognita* of the human being, his vegetative nervous system. Bloch is undoubtedly right in asserting that the tangibilities are on the side of the externalists and that they are advancing much faster for the moment in their share of the working out of the etiologic mechanism of dermatitis and eczema. The students of intrinsic causes, the scientific as distinguished from the intuitional side of whose work is so fraught with pitfalls of subjectivity and experimental difficulties, are still far in the rear. But there is no justification for a refusal of either side to recognize the existence of the other, or for the specifists to deny the influence of a general predisposing mechanism among the causes, merely because mental stress, for example, is not as visible and measurable as the dose of primrose extract which will induce sensitivity in a normal and previously unsusceptible subject.

What, then, is the eczema problem of today? It consists in an effort to unravel the details and to make a statement of the laws governing the specific reactivity of an individual to the exciting cause coming from without which is giving him or has given him an eczema; and an equally clear definition of the type and methods of action of the *internal* disorders and disturbances of function and structure which contribute to and perpetuate his abnormal reactivity to stimuli, specific or non-specific.

Turning, then, once again to the schedule of causes of dermatitis, one finds therein many evidences of the sifting-out process, with respect to the older conceptions of eczema, that today confuses the practitioner whose dermatology dates back twenty or even ten years. Many things that passed as eczema in the texts and teachings of only a decade ago are now being recovered from the catch-basket and pigeonholed as well-defined entities. This is particularly true of dermatitic reactions due to infections. The best examples lie in the field of the mycotic or fungous lesions of the skin. Many of the former "chronic eczemas" of the hands and feet are now recognized either as actually due to a

fungus usually some member of the epidermophyton group of fungi or as secondary sensitization phenomena, spoken of as dermatophytids. The eczemas of the axillæ, groins and anogenital region, known for years as intertrigoes or flexural eczemas, are falling into the same group. Castellani, among others, has given much attention to these types. The moist and freely-perspiring regions of the body, and particularly those whose sweat and circulatory mechanism is markedly influenced by states of nervous stress or excitement, are ideal sites for the development of mycotic eczemas. In some of their forms, as particularly in the so-called eczematoid parakeratosis, which affects the submammary and inguinal regions of elderly women, with frequent coincident involvement of the skin behind the ears and in the umbilical depression, the instrumentality of a fungus or of some infectious agent seems almost undoubted. The clinical picture is as distinct an entity as herpes zoster. Culture, however, may fail to identify anything but a mixture of pyogenic organisms, often unusual types of streptococci, possibly because of unsuitable media or growth conditions.

Evidently, then, the bacterial and mycotic flora of eczema is a problem of the first order; to be studied, let me insist again, from the standpoint of the favoring conditions in the patient which promote such growth and such distinctive localization, quite as much as the classification and type of the organism. In the one direction, as evidence of the trend of the time, we find the observations of MacLeod and his co-workers in England, and of Cleveland White and C. J. White and others in this country, tending to indicate that what have been called seborrheic eczemas are yeast infections on a susceptible background. The observations of Fordyce, Sutton, and recently of Herbert Mitchell, on the other hand, point toward pyogenic organisms as responsible for other distinct types of what used to be eczema, particularly of the extremities. The newer terminology, then, should recognize a concept within the old "eczema" category. This is "eczematoid dermatitis," of mycotic (yeast) or infectious (pyogenic) origin. The former group includes attendant allergic phenomena in especially susceptible individuals, and the latter includes eczemas apparently traceable to pyogenic organisms, yet without the distinctive pustulation, crust and bulla formation of the impetigoes. The whole problem is complicated by the question of contaminants and saprophytes as against pathogenic organisms. A number of years will probably be required to establish conclusively the causative as distinguished from the merely coincidental or contributory rôle of some of the microörganisms now put forward as responsible for various forms of dermatitis and eczema. Be that as it may, the group of infectious eczematoid dermatitides is the most recent branch from the ancient parent trunk of eczema. The importance of the factor of individual constitutional background, even in this new group, is well illustrated by the fact that certain of the investigators mentioned have been successful in their attempts to carry through the postulates of Koch only by inoculation upon the skins of the patients who were already victims of the "eczema" they were investigating. Normal skins, as noted by both MacLeod and White, do not give typical lesions on inoculation of cultures. Even here, then, the constitutional background outweighs the external exciting cause.

In the background of eczematoid dermatitis, as I have seen it, lie the elemetns of a disordered cutaneous carbohydrate metabolism or an excessive carbohydrate intake; the congenital anomaly of the fat secretion mechanism and the keratization cycle known as ichthyosis; gastrointestinal dysfunction, especially hypochlorhydria; elements of nervous stress, fatigue, overwork, and strain; focal infections in tonsils, teeth, sinuses, colon, gall bladder, or perhaps the prostate; allergic elements, including susceptibility to special irritants and the atopy to be presently mentioned as occurring in true diathetic eczemas.

With intertriginous eczema, seborrheic eczema and infectious eczematoid dermatitis being gradually reinterpreted with respect to their balance of constitutional and external exciting causes by an increasing clarification of the local factors, there remain to be accounted for, under the general concept of eczema, the so-called nurslings' eczema of the German writers; metabolic eczema; involution eczema, and, finally, neurogenous eczema and the so-called diathetic or constitutional eczema which forms the third member of the eczema-asthma-hayfever complex. In these groups the constitutional background still appears to maintain the upper hand in the etiology.

The term, *infantile eczema*, as commonly used in this country, covers a variety of types. The seborrheic or carbohydrate metabolism factor is chiefly responsible for one group, which responds to a reduction in starch and sugar intake and a substitution of fats. Essentially this is seborrheic eczema in the child, then, from the constitutional standpoint.

Another group of infantile eczema cases undoubtedly can be classified as infectious eczematoid dermatitis —the pustular pictures which are not impetiginous, the extensive, even universal, eczemas of infancy with marked lymph-node involvement and occasional abscess formation or alternating bouts of multiple furunculosis and eczema. A third group includes the allergic eczemas, in which cutaneous tests demonstrate a reactivity to certain food proteins, notably those of milk, beef, eggs, and wheat, and from which recovery takes place on withdrawal of the incriminated substance. This last-mentioned is perhaps the true nurslings' eczema of the German writers. The term *infantile eczema*, as used in this country, includes all of them, and success in their management is to some extent dependent on ability to identify the most influential factor by a careful local and general examination and a detailed dietary and habit history. Close on the borderline of infantile eczema lies that most interesting complex of dermatology in children, a curious mixture of eczema, urticaria, and erythema multiforme, called *lichen urticratus*, in which neurogenous factors mingle with local, dietetic, infection and sensitization elements in a most intriguing interplay. Included in what is commonly called infantile eczema is, too, a proportion of cases which represent the early symptomatic appearance of the true diathetic eczema to be presently described.

Metabolic eczema is a concept of decidedly hazy definition, and one more often, I think, misused than correctly applied. A typical example would be the type of eczematous and dermatitic change which is seen most often in young girls in association with subnormal basal metabolic rates, indicative of endocrine deficiencies. The response of some of these patients to thyroid medication is undoubted; but, as one observes a succession of them, one wonders whether it is the thyroid as such that brings about the improvement, if any occurs, or whether it is not simply the action of the drug as a vasodilator, with the consequent stimulation of the keratization cycle of the skin, and the raising of its general nutrition through a freer blood supply, rather than a distinctive endocrine action as such. Undoubted cases of ichthyosis in young persons, for example, can be transiently improved by the administration of thyroid, which makes them sweat—but if the drug be continued, they quickly show signs of hyperthyroidism, as would a normal person, and if it be dropped they recur to the original cutaneous condition. The action would in such cases seem to be incidental and symptomatic rather than fundamental. That there is a metabolic element in many eczemas seems probable, but that it is causative of the cutaneous picture, and not merely another symptom of some underlying disturbance, probably of the sympathetic nervous system, is the impression one gets from repeatedly working up such cases. The significance of the basal rate of —4 to —14 in these patients, so often stressed by internists venturing into dermatology, together with the disturbance of gastric secretion in the direction usually of hypoacidity; the low blood-pressure; the irregular menstruation, alternately retarded and overfrequent for considerable periods; the vasomotor instabilities; the occasional suggestion of acromegaly—all these things point toward endocrine disturbance. Their intimate significance, however, so far as thyroid, pituitary and other endocrine glands are concerned, is as yet far from explanation. There are undoubtedly metabolic factors in eczema, but their meaning is still obscure.

Involution eczema includes the intractable dermatitides of later life, which so much too often torment what should be a peaceful old age. Here, too, is a field full of problems, and no entity is precisely definable. The ears, scalp, groins and extremities are most often involved. A search for every available external-irritant explanation in these cases often leaves one with nothing tangible. The patient is simply old and worn out. Focal infections may be identified, but there is no result from their removal, the trouble being simply transferred to some other point in the patient's weakened economy. Time and again it has seemed to me, for example, that the chronic bronchitis superposed on emphysema in the aged in this climate is an important element in the irritable, senile skin. Physiologic decline of the fat-secreting power of the sebaceous glands leaves the skin relatively more susceptible to bacteria and external irritants. Winter drying and artificial heat, toothless mouths that can not chew food, senile achlorhydria, the train of prostatic difficulties, the chronic joint focus, the ancient and honorable "gouty diathesis," all mingle in a depressing background of decay. One is tempted again and again to write a thesis upon *worry* as the background for the itching skin and scratcher's dermatitis of old age. Yet it is imperative to resist the temptation to fall back on generalities until every individual item of local importance has been accounted for. How often have I been inclined to accept involution eczema as a diagnosis, ultimately to find that bandage support of a mild grade of varicose veins did away with

the persistent tendency to eczematous outbreaks on the senile leg. How often have I laughed as a patient told me of his "gouty diathesis" diagnosis, when less soap and more grease, or an attack on the ringworm between his toes, gave him relief. But years of observation have only strengthened my appreciation of the importance as an index of constitutional overload, of the appearance of an eczema after the age of forty-five.

Every medico has his hobby; mine, I frankly confess, is the neurogenous factor in dermatoses, so that, in presenting it to you, you will smilingly indulge a little enthusiasm on my part. Yet it *is* interesting to see how the horizon is widening in this direction among dermatologists. A state of mind, acting through the vasomotor system, and the as yet unknown mechanism of itching, *can* underlie the appearance of a dermatitis and nothing will finally avail to control it until the mind is set at rest. It is true that there is usually an exciting case identifiable, but it is so far non-specific that at one time it may appear to be one thing, and at another a different thing. A woman, worried with good cause about her husband's health, develops a dermatitis of the neck, of that type so familiar to me as a feature of my eastern transplantation that I call it "Philadelphia neck." Ingenious devices to protect the neck from irritants fail, and a full schedule of sensitization tests reveals that squirrel fur is the alleged exciting cause. The squirrel coat is put away; the neck clears up. Two months later, when the worry has again become acute, the trouble reappears—this time without the intermediation of squirrel. The same picture develops time and again in women quarreling with daughters who stay out too late; in women traveling wildly to escape the boredom of an old age with duties but no interests; in women, the ambitious wives of unambitious, retiring and scholarly husbands; in women with flower gardens but also with husbands forty years too old; in women who recover and yet keep their gardens, when their philosophy of life has triumphed over the seeming *impasse*. Just as Bloch has shown that it is possible to remove warts by psychotherapy and nothing else, so it may some day be shown, by some sufficiently bold explorer, that it is possible to remove some forms of eczema by the same means. Today, however, I only claim that the mind and the nervous system provide the source and the transmitting mechanism for a powerful group of predisposing causes in the etiology of eczema.

Just how the nervous system acts in the production of these effects is a difficult problem. Hazen and Klauder were the first in this country to publish their impressions and researches, and there is a rapid accumulation of material in the last few years in the German literature, which centers around the vagus-sympathetic system as the probable reaction mechanism, and the calcium potassium balance of the skin as a fundamental chemical fact in the production of cutaneous irritability. No doubt, too, the gastro-intestinal tract, whose susceptibility to emotion has recently been so beautifully summarized by Alvarez, is an important link in the sequence of events. The present status of knowledge is hardly much better defined than is that of the endocrin system, but the practical utility of calcium therapy and atropin suggests that there is some fire underlying all the smoke. There is not as yet any simple classification of all dermatoneurotics as either vagotonic or sympathicotonic, for it appears, according to Brill, that they may be either, and that they may be one thing with respect to their skins and another with respect to other groups of structures. In practice, however, it is usually easy to recognize the vagotonic, and he is the one, rather than the sympathicotonic, whom it is possible to help. The dermatoneurotic is not at all the nervous or outwardly emotional individual who finds relief in tears and screams. Such persons "blow off" and are relieved. The dermatoneurotic is controlled. His makeup, his "poker face," is perfect. He is the pillar of strength to whom all his friends and people come with their troubles. In storm he is calm, the master of every consciously controllable reflex, who never blanches before the blast. But for that perfect front he pays, as I tell my patients, by an almost invincible predilection for "hollering down his backstairs." He sends outrageous, disturbing and contradictory messages to his sympathetic engine-room coördinating mechanism, by way of his vagus speaking tubes. His is the inward tempest, the strife and struggle kept from the world. A little atropin, a little calcium, a few talks, a little physiotherapy, much rest, and he can be transformed for the time being. Really, to cure him may be the reëducational task of months.

Just how one recognizes the psychoneurotic background in the patient with a dermatitis is a little difficult to say. There is an element of instinct in it, an appraisal of the small signs of tension that is done in part by the subconscious mind of the examiner. The vagotonic picture, or, perhaps better, the disturbed vagus-sympathetic picture, is not hard to identify—the florid or flushing face ; the moist, cold,

perspiring, though red or bluish, hands; the bright red line, or even wheal, that quickly follows a sharp stroking of the skin with a blunt implement (strich reaction). On this background, not alone urticarias and eczemas, but the dermatomycoses, thrive.

I see that I have read off the larger part of my page allotment without touching on the one most fascinating mystery, the one most intractable problem, and the one still simon-pure example of etiologically defined constitutional eczema in the calendar. This is the eczema of the asthma-hay-fever complex, the so-called late eczematoid of Rost or prurigo of Besnier. The clinical picture is distinctive in the large majority of cases. Involvement of the face, especially the forehead and the skin about the mouth and chin, and of the flexures of the elbows and the popliteal spaces, by a dry, thickened, leathery dermatitis, excoriated by scratch, is highly characteristic. Bursting from time to time, without apparent excuse, into exacerbations which may convert the face into a shapeless and oozing mass with slits for eyes and mouth, and a "blob" nose; the scalp hair gummed with sticky exudate of a pallid, sickening, sweetish odor; the ears swollen and dripping; the neck fissured; the arms and the legs furiously itching and torn—the disease is one to terrify victim and onlooker alike. When the fundamental incurability of the process is taken into account, together with its hereditary background and its ability to injure personal appearance, which is the source of so much that is necessary in livelihood and essential in the happiness of life, you can easily understand why I rate diathetic eczema as one of the crippling ailments that affect mankind.

In the background lies always a certain group of perhaps etiologically important facts: (1) An inherited tissue irritability, an atopy, as the students of sensitization phenomena call it, which makes the patient abnormally susceptible to irritants, or, rather, makes substances irritants for him, or certain parts of him, that are not irritants for the normal individual; in some way his cellular constitution is at fault. (2) The group of predisposing causes already discussed as active in the simpler eczemas—the ichthyotic and the seborrheic makeup, the focal infections, the gastrointestinal dysfunctions and the metabolic abnormalities. (3) Overshadowing in its fundamental character all the others is, in the opinion of recent writers, an abnormal nervous system. Just what makes these patients a distinctive nervous group is again hard to define. Yet their reactions are startlingly alike. In all, there is an inward tension. There appears over and over the "electric relation" between parent and child. The youngsters are violently, almost unbalancedly, active. They quickly get out of harmony with the established order and are vigorously "don't-ed" back into line. They are precocious often. As they grow older, they become destinationists, as I call them, rushing always upon an end, with that, and not the road, in view. The commonplaces of psychiatry, sex substitutions and fixations may be implanted upon this soil as on any psychotic background, facilitated by the sense of inferiority that lifelong helplessness in the face of such an ailment brings about. Multiple sensitivity to proteins with which the patient may or may not have contacts is a recognized commonplace in such cases and is the despair of one who seeks in skin tests a clue to extrinsic etiology. There is some distinctive response in the few, none in the many, cases, and the results of a general medical workup are equally disappointing.

The notion that blood chemistry will reveal much worth while is questionable, for the intimate chemistry of the skin is more probably the site of the disturbance, if any. There is no reaction to ingestion of urates (Michael). The acid-base equilibrium is disturbed (Dromet and Verain). The sugar-chlorid ratio changes, the sugar tolerance drops (Usher and Rabinowitz); the precipitable calcium decreases (Burgess), the calcium-potassium balance is disturbed with a rise in calcium on recovery from an attack, and the reverse during an exacerbation. An attempt is being made, as yet unevaluated, to attach most eczemas to the trail of arsenic, unwittingly ingested in a multitude of ways. Endogenous toxins from the intestine are blamed likewise. As Nathan and Stern assert, all these are probably but epiphenomena, and not centrally significant causative facts.

Summary of Treatment of Eczema.—How shall we treat eczema? If I were asked, as I am, to give in a closing paragraph a scaling ladder to the outer confines of an unconquered citadel, I should say:

1. Search for the external excitant, though it may be difficult to find and its removal may avail little.
2. Reduce the carbohydrate intake. Take a meal-by-meal history of the diet.
3. Know and grease the ichthyotic.
4. Look for dermatophytosis of fingers, toes and groins, and for pustules. Your patient's eczema may be an infection.
5. Try to restore balance by correcting the outstanding errors in focal infection and gastrointestinal troubles.

6. Expect less of sensitization tests, metabolism determinations, blood chemistry, and routine physical and laboratory workups, and more from a full history, an experienced appraisal of type and quasi-empirical management.

7. Keep water and soap away, and learn to juggle ichthyol and tars, especially crude coal tar.

8. Use röntgen ray sparingly, the quartz lamp often, autohemotherapy oftener, calcium in large doses on an empty stomach oftenest.

9. Study the nervous background, but do not fall back on its explanations until the physical person has been completely searched.

10. Pray—for we must, in this wilderness, as Ochsner, from the depth of a vast surgical experience, said, "Leave something to God."

CASE REPORT

PROSTATECTOMY FOLLOWED BY SUDDEN DEATH *

By WILLIAM R. LAIRD, M.D.
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A prematurely senile negro, age 65, admitted to the clinic July 1, 1929, with retention of urine. For six months the patient had felt as if he were carrying residual urine. There was dribbling and difficulty of urination. Ten days prior to admission he was catheterized by his physician, and was given a catheter and instructed in its use. Twenty-four hours before coming to the clinic there was complete retention.

Physical examination revealed a prematurely senile negro; temporal vessels sclerosed and tortuous; complete adentia; tonsils atrophied; heart enlarged; sounds subnormal in intensity; frequent extrasystoles; blood-pressure 150 systolic, 80 diastolic; elongated prepuce, marked phimosis; prostate enlarged, hard, smooth, not adherent; residual urine 350 c.c. Urinalysis: cloud of albumin, few pus cells. Icterus index 7.6; sedimentation index 22 mm. Blood chemical analyses: non-protein nitrogen 68 mgs. %, urea nitrogen 37.6 mgs. %, plasma NaCl 370.6 mgs. %; CO_2 combining power of the blood plasma 67 vol. %. Impression: Prostatic hypertrophy, benign. (*a*) Arteriosclerosis, diffuse. (*b*) Tonsillitis, chronic, atrophic. (*c*) Phimosis. (*d*) Premature senility. (*e*) Organic heart disease, (1) arteriosclerosis, (2) interstitial fibrosis, (3) premature beats, (4) Class No. 2-A.

When referred to the hospital, temperature ranged from 99.2° to 100.6°. Patient was kept in bed, but moved frequently from side to side, and later sat in chair despite a febrile course. Fluid intake averaged 3,450 c.c. Low protein diet, 40 grams, salt-free, from 750 to 1,200 C. Catheter was fixed in the urethra. There was considerable difficulty with the catheter because of the elongated prepuce and phimosis; therefore, under local anesthesia, circumcision was done after the method of Keyes and catheter reinserted.

Nine days after admission the phenolsulphonephthalein elimination was 10% in two hours. Temperature reached 103°. Twenty days after admission the phenolsulphonephthalein elimination was 35% in two hours. Anorexia; marked muscular asthenia; profound depression. Strychnin, gr. 1/30 three times daily. Urinalysis: a trace of albumin, few pus cells. Chemical analyses: non-protein nitrogen 40 mgs. %, urea nitrogen 28 mgs. %. Phenolsulphonephthalein elimination, 35% in two hours.

Thirty-eight days after admission, chemical analysis showed non-protein nitrogen 22 mgs. %, urea nitrogen 16 mgs. %, and phenolsulphonephthalein elimination, 35% in two hours. Forty-six days after admission, phenolsulphonephthalein elimination for the two-hour period was 40%.

After forty-six days of observation and preoperative preparation, patient was considered operable. After medical consultation and under nitrous oxid-oxygen analgesia, a suprapubic incision 7 cm. in length was made and a one-stage visualized prostatectomy done. Hemostasis was complete. Urethral catheter placed; Retzius' space was drained. Immediately after operation, patient received 200 c.c. of unmodified blood by the direct method.

After operation the temperature ranged from 98° to 102°. The fluid intake averaged 2,108 c.c. per diem, urinary output 1,469 c.c. The day of operation, patient was propped up in bed, and the following day he was up in a chair. Three days after operation, chemical analyses showed non-protein nitrogen 38.7 mgs. %, urea nitrogen 16.0 mgs. %, and phenolsulphonephthalein elimination for the two-hour period 60%.

One week after operation, the wound was healed by first intention and sutures were removed. Ten days after operation, urethral catheter was removed and for twenty-four hours there was dribbling. Diet provided 750 to 1,200 C.; protein content did not

* Mortality report presented to weekly staff conference, Coal Valley Hospital, November 25, 1929.

exceed 40 grams. Fifteen days after operation, non-protein nitrogen was 30 mgs. %, urea nitrogen 15.8 mgs. %. Mosenthal renal function test disclosed inability to concentrate. Patient up and about ward every day. Medical consultation requested. "Patient can be discharged from hospital the latter part of the week, and should definitely restrict his physical activities; he should undertake nothing more than walking on level ground, and return in two months for examination. Diet on discharge: limited protein, excluding purées and broths."

On September 6, 1929, patient was ordered discharged from the hospital. His relatives did not come for him. Twenty-four hours after order for discharge, while attempting to get into bed, assisted by nurse and orderly, he complained of dyspnea and suddenly expired. Necropsy findings given and slides thrown on screen with projectoscope.

Necropsy.—Examination begun one hour after death. Body externally resembled previous clinical description. The suprapubic wound was completely healed; when reopened, there was a small, localized collection of pyoid material about 1 cm. in size noted in the subcutaneous tissue.

Heart, grossly: Pericardial sac normal; contained 10 c.c. of clear, straw-colored fluid. On the anterior surface in the mid-portion of the right ventricle, and on the posterior surface near the right margin in the mid-portion, there were soldier's spots. Coronary arteries on the surface very tortuous but not beaded. Dilatation of the left ventricle. Heart muscle was brownish-red in color. The fossa ovalis was patent through a slit 6 mm. long anteriorly. Dissection revealed coronary arteries tortuous; no infarcts or emboli. Occasional slight elevations of the intima. Marked thickening of the chordæ tendinæ of both tricuspid and bicuspid valve leaflets. Marked thickening with calcification of the intima on the aortic side of the aortic leaflets attached to the base, occurring in masses and varying in size from 1 to 3 cm. Ascending aorta normal. Grayish translucent areas about 2 mm. thick in the abdominal aorta, from which a section was obtained: Left ventricular dilatation, (*a*) myocardial fibrosis, (*b*) coronary sclerosis, (*e*) epicardial fibrosis, (*d*) patent fossa ovale.

Heart, histologically: Cells atrophied; bipolar pigmentation with areas of increased fibrosis. Increased subepicardial fibrosis and hyalinization. Brown atrophy, (*a*) myocardial fibrosis, (*b*) soldier's spot.

Abdominal aorta: Proliferation of tissue lying on endothelial side of muscle layers with fibrosis, hyalinization and calcification; atherosclerosis with calcification. Crista terminalis (heart, S. A. node): Marked increase in connective tissue about the nutrient artery. Increased fatty tissue; fibrosis.

Lungs, grossly: Obliterative pleurisy, right, (*a*) anthracosis, (*b*) basal congestion.

Lungs, histologically: Interstitial pneumonitis (luetic?), (*a*) emphysema, (*b*) anthracosis, (*c*) interstitial fibrosis, (*d*) endarteritis obliterans, (*e*) pleural (visceral) fibrosis.

Liver, grossly: Normal.

Liver, histologically. Coagulation necrosis, (*a*) congestion, chronic, passive.

Gastrointestinal tract, grossly: Normal.

Kidneys, grossly: Renal arteriosclerosis, (*a*) renal cortical cyst, (*b*) hyalinized glomerular tufts. Ureters normal. Bladder mucosa moderately hemorrhagic. No residual prostate found; hemorrhagic cystitis.

Kidneys, histologically: Chronic interstitial nephritis, (*a*) chronic, interstitial fibrosis, (*b*) glomerular hyalinization, (*c*) endarteritis obliterans, (*d*) congestion, (*e*) cloudy swelling.

Spleen, grossly: Brown atrophy.

Spleen, histologically: Brown atrophy.

Pancreas, grossly: Normal.

Discussion

DR. LAIRD: The indication for operation in this case was an enlarged prostate, making complete emptying of the bladder impossible. The patient was prepared for operation by dietary restrictions, elimination, and bladder drainage through a permanent indwelling urethral catheter. As a result of the use of the catheter, the urinary infection cleared up and the renal function improved. Operability was determined by studying the patient's general condition, by electrocardiographic studies, and by frequent renal function studies. During the period of preoperative preparation there was marked mental and physical depression. Strychnin, grains 1/30, was given three times a day with very beneficial results. Our anesthetic of choice in these cases is nitrous oxid oxygen analgesia in preference to any other form of anesthesia. The operation was the one-stage visualized prostatectomy, the important principle of which is to leave a clean capsule with complete hemostasis. As Dr. Woodbridge will tell you, a transfusion is done in 75% of our series. In the post-operative course, fluids were not forced. In the elderly patient with marked cardiovascular renal damage and salt retention, an excessive amount of fluid adds to the patient's burden. Pulmonary edema

has been found at necropsy in some of our patients who had high plasma chlorides prior to operation, upon whom fluids had been forced in the post-operative course. Hepatic insufficiency can be produced by giving fluids in excess of the patient's physiologic needs. In animals, a moderate decrease in the volume of bile, a decrease in the bile acids, and a decrease in the concentration of the bile salts can be produced by giving 25 c.c. of water per kilogram of body weight per hour. It is my impression that a much smaller amount of water will produce hepatic insufficiency in a man.

The urologists have taught us the necessity of studying our patients from the standpoint of their functional capacity. Willius has reported that fully 50% of the prostatic obstruction patients studied in the Mayo Clinic had clinical and electrocardiographic evidence of cardiac disease. All of our patients have had degenerative changes in the cardiovascular renal system. The causes of sudden post-operative deaths should be determined, not by the surgeon but by the internist. The surgeon is too prone to erroneously consider every post-operative death as due to cardiac failure. With the exception of those patients suffering from syphilitic aortitis or advanced coronary disease, few who have cardiac disease expire during operation or immediately thereafter. The late Albert J. Ochsner cryptically said that in surgery the cardiac case is safe because it is considered especially unsafe.

The lesson learned from this experience is the necessity of close coöperation between the internist and the surgeon. Had this patient left the hospital, this would have been considered a successful case. A review of the record will show that the case record was completed, the patient marked discharged, and the result classified as recovery. This suggests that, in making end-result studies, a period of time should elapse between the date of discharge from the hospital and the time of the report. Without this period, our end-result reports would be of little value.

Dr. Borman: Considerable interest centers about the exact cause of death in this patient. In the past we talked considerably about cardiac dilatation, but very few cardiologists now say that patients die from dilated hearts. Whenever there is no demonstrable cardiac lesion, it is believed that the patient develops ventricular fibrillation, which is, of course, followed by dilatation and demise. At necropsy the heart is seen to be dilated, which accounts for our previous conception. This patient's myocardium showed a marked degree of fibrosis, and it is quite possible that the amount of exertion expended getting into bed was sufficient to produce acute cardiac strain, resulting in fibrillation, dilatation, and death. It would seem that the exertion incident to prostatectomy is less than that used in getting into bed.

Dr. Woodbridge: We agree with Dodson, of Richmond, that, in elderly arteriosclerotic patients upon whom a prostatectomy is performed, a small post-operative transfusion is indicated. Due to arteriosclerosis, the elasticity of the vascular system is diminished, and hemorrhage, which is offset in the young by constriction of the vascular system, is consequently more dangerous in the elderly arteriosclerotic patient, in whom the ability to constrict is diminished. Although the loss of blood in this case was small, nevertheless we believe that an amount of blood somewhat greater than the amount lost at operation should be transfused. Although this man was a charity patient, nevertheless several young colored men esteemed him highly enough to present themselves as prospective donors, and, although after operation the patient's condition was satisfactory, as a prophylactic measure he received 200 c.c. of unmodified blood by the direct method.

ABSTRACTS

Lesions of the Breast

Joseph Colt Bloodgood: "The Changing Clinical Picture of Lesions of the Breast" (*Amer. Jour. Med. Sc.*, 179:27-48, January, 1930).—The value of the anti-cancer educational campaign is seen in the author's figures that in former years 80% of the breast tumors were malignant, whereas now only 17% are malignant, 18% subjected to operation, and 65% benign, in which no operation was indicated. Today, the problem is first to find the lump by palpation, and, second, to differentiate it by frozen section in the operating room from malignancy.

In discussing the benign conditions of the female breast for which operation is not indicated, the following are described: 1. Pain. The author states that, up to the present, he has never found a malignant tumor in a woman who sought examination for pain only. The value of this symptom is that it may lead to the discovery of a lump or it brings the patient to the physician. 2. Painful scar. This is largely a circulatory phenomenon, and is not a sign of recurrence of the disease for which the operation was performed. 3. Nipple discharge. This, no matter what its character, is not a sign of cancer.

4. Nipple retraction. Intermitten retraction means chronic cystic mastitis. When one nipple has recently retracted, the breast should be explored. To demonstrate nipple retraction, move both arms up over the head during inspection. Pull nipple forward to determine degree of fixation. 5. Nipple lesions suggesting Paget's disease. Irritation. If, after cleansing with soap and water, using cotton and followed by medicated alcohol, vaseline and gauze, it fails to heal, excise it with the areola and a zone of breast beneath. If frozen sections reveal no evidence of malignancy, the breast is saved. If Paget's cancer is present, the complete operation for cancer is performed. Always look for warts and keratosis, which should be treated immediately. 6. Disappearing tumor. With the exception of the caked breast and the lactation mastitis, this is a definite sign of chronic cystic mastitis. 7. Tumor or tumors in women under the age of twenty-five. Operation may be postponed, unless the tumor enlarges or suppurates. The indication for operation is to save the breast, and not the life, of the patient. The most frequent tumor in the group under 25 years is the single or multiple encapsulated adenoma. After twenty years, all palpable tumors in or near the breast should be removed, for fear that later in life it may be removed and diagnosed as cancer and the breast sacrificed. 8. Tumor or tumors in women over the age of twenty-five. (*a*) Shotty breast. Common clinical finding; and, with the rarest exception, operation is not indicated. Where tumors can be distinctly palpated in the shotty breast, exploration and frozen section is necessary. (*b*) Dilated ducts beneath the nipple. Usually bilateral and unassociated with cancer. (*c*) Lumpy breast. Do not operate unless a distinctly palpable tumor is found, usually due to a chronic cystic mastitis. (*d*) Multiple, definite lumps in one or both breasts. In younger women, the most common finding is encapsulated adenoma; in older women, chronic cystic mastitis. (*e*) Areas of mastitis or caked breast. Operation justifiably delayed only in pregnancy or lactating breast, with clinical evidence of inflammation and the typical shotty bilateral breast. Do not delay when the breast mass in a woman over twenty-five suggests mastitis on palpation. 9. (*a*) Aberrant breast tissue in the axilla. Operation is not indicated unless one can palpate a definite tumor or unless the size necessitates its removal. (*b*) Sebaceous and sweat-gland nodules in the axilla. Operation unnecessary. 10. Unilateral hypertrophy at puberty. At later ages, means encapsulated adenoma or possibly sarcoma. In a man, with unilateral breast enlargement of a few weeks' duration, excise the whole area with the pectoral fascia under local anesthesia and do frozen section. 11. Diffuse virginal hypertrophy. Benign process. 12. Breast changes, the result of atrophy after lactation. May simulate malignancy. 13. Skin lesions of the areola and skin over the breast. These should be treated the same as skin lesions elsewhere. The author then describes the proper examination of the breast, including the transillumination described by Max Cutler in June, 1929, and the use of röntgen plates of the breast. M. C. B.

Treatment of Glaucoma

SIGURD HAGEN: "Notes on Norwegian Ophthalmology, Especially on the Diagnosis and Treatment of Glaucoma Patients" (*International Clinics*, December, 1927).—Professor Hagen has found the intraocular pressure curve of the greatest practical importance in diagnosis and treatment of glaucoma.

There are daily variations in pressure. The maximal pressure occurs in the morning and the minimum in the evening. In the "inverse type" the pressure is highest in the evening. The curves for both eyes follow one another in an almost parallel course.

In the early stages of glaucoma the whole pressure curve often is below the limit of the normal tension; yet the typical daily variations prove the presence of glaucoma. The pressure in the normal eye may also vary, but very slightly.

In treatment of glaucoma the pressure curve is also of importance. It is of great practical importance to be able to demonstrate the effect of myotics on the pressure curve. Failure to obtain a completely satisfactory effect from myotics is an indication for operation, or, at any rate, for frequent and careful observation of the patient so as not to risk postponing the operation too long.

As to the method of operation, Holth's extralimbal tangenital punch forceps sclerectomy is preferred in chronic glaucoma. By this method the risk of late infection is reduced. A smooth scar with normal tension is quite common after this operation.

The routine taking of the pressure curve is described and a brief outline of the technique of Holth's operation is included.

Concentrated Foods

JULIAN L. ROGATZ, M.D. (*American Medicine*, November, 1928), makes a strong plea for the

routine use of more concentrated formulæ in the feeding of infants. He points out the disadvantages of starting the infant off on the weaker or diluted formulæ, which method has always been held in great regard. The use of concentrated formulæ is becoming more frequent and is overcoming many of the difficult problems in infant feeding, although there is yet considerable hesitation among physicians in using this type of feeding. Concentrated feedings are based upon scientific study and observation, and it seems advisable to use such formulæ.

A series of cases is recorded to substantiate this procedure. Interesting charts are given to show marked improvement in weight among infants fed upon the concentrated formulæ. High protein, fat or carbohydrate in the formulæ are not harmful, and, therefore, point to the use of the more concentrated diets. Pyloric stenosis, accompanied by severe vomiting, is overcome by this form of feeding. Regurgitation is often controlled by adding a boiled cereal to the formula and feedings with "the necessary caloric equivalents concentrated into a minimum volume, give better results than the more dilute formulæ." This is due to an enhanced peristolic activity. The use of concentrated formula as a more general routine measure will obviate many of the difficult feeding problems.

TUBERCULOSIS ABSTRACTS

Neuromuscular Hypertension and Relaxation

Nature's medicine chest contains no more useful or important remedy than rest. In the treatment of tuberculosis, we use numerous devices to immobilize the lung itself, but still rely chiefly on general body rest. Complete rest, however, is not achieved merely by commanding the patient to be quiet or by putting him to bed. Tenseness of mind, nerves and muscles prevents most of us from resigning ourselves to a vegetable inactivity and so deriving the maximum benefit from rest. Edmund Jacobson, of the University of Chicago, has made a scientific study of rest, on the basis of which he has developed a technique of securing complete relaxation. The following excerpts are derived from his book, "Progressive Relaxation," published by the University of Chicago Press:

Neuromuscular hypertension is due to a reflex excitation or irritability. In disorders involving structural nerve lesions, such as hemiplegia and diplegia, this tenseness is easily discernible. Similar, but less obvious, symptoms of hypertension may be observed also in persons without nerve trauma and in those not ordinarily branded as "nervous, restless or irritable."

The symptoms of hypertension have their origin in a variety of conditions, including prolonged pain or distress, emotional disturbances, such as fright, loss, or bereavement; bacterial infections, trauma of all kinds, chronic nervous strains, and possibly congenital defects of the nervous system. The author distinguishes sharply between hypertension and neurasthenia (a fatigue phenomenon), and says that, like arterial hypertension, the term represents not a diagnosis but merely a systemic condition, and does not deny possible underlying pathology.

Overcoming Residual Tension.—When an unpracticed person is instructed to relax, tests generally reveal a "residual tension" which appears to be a fine tonic contraction along with slight movements or reflexes. The respiration is slightly irregular, the pulse may be moderately increased (as compared with the pulse in complete relaxation), there are local reflex activities, such as frowning, movement of the eyeballs, restless shiftings of head, limb or finger; the knee jerks can be easily elicited, and a sudden, unexpected noise causes the patient to start. Doing away with this residual tension, slight as it may be, is what is needed to derive the full benefits of relaxation. This is accomplished only as the result of practice. When relaxation is complete, the individual lies quietly with flaccid limbs; there is no trace of stiffness, no reflex swallowing, movement of the eyelids, nervous movements or tremor, while mental and emotional activity dwindles and disappears for brief periods. The condition is pleasant and restful. The sleep which often results is not a hypnoidal or trance state, but a perfectly natural sleep.

The patient is taught to localize muscular contraction: in this case, the *orbicularis oculi*.
—*Courtesy U. of C. Press.*

Teaching the Patient to Relax.—Learning to relax is a matter of nervous reëducation. The patient is taught, first, how to identify and to localize tensions. Once he has cultivated a muscle-sense (joint

and tendon sensations may be disregarded), he easily learns to "relax his tensions away." Practice begins with the patient lying comfortably on his back on a couch. He is told to contract steadily and slowly a single group of muscles, say the flexors of the forearm, while the upper arm rests limply on the couch. The physician's hand retards the movement slightly so as to intensify the sensation of muscular contraction. The patient observes the muscle "feel," though he does not concern himself with the anatomical details, nor should he palpate his own muscles or watch his own movements, this being the physician's function. As the patient acquires skill, the physician's passive resistance may be omitted. When the experience of localizing a contraction has become thoroughly familiar, the patient becomes aware of what he is *not* to do; he learns to "let go" and discovers that relaxation is simply the negative state of contraction. Practice with a given set of muscles eventually enables him to relax them without effort. Thus, one set of muscles after another is trained, not omitting the facial muscles and the eyes, until the patient learns to relax the entire body at will.

Relaxation with open eyelids gives the patient a particularly vacuous appearance.
—*Courtesy U. of C. Press.*

Suggestion Not a Factor.—At no time is the instruction given to stop thinking or to make the mind a blank. The fact that one may go to sleep while practicing muscular relaxation harmonizes with the laboratory evidence that mental and emotional activity is apparently diminished. The author insists emphatically that the method of progressive relaxation is not a form of "suggestion" or hypnosis; in fact, in his training of patients, he scrupulously avoids suggesting effects that may follow and simply directs his patient what to do in the same manner as when prescribing diet or exercise. Voluntary relaxation of an undesired mental activity differs in mechanism from so-called "suppression" or "repression," which are commonly attended with effort, which is the reverse of relaxation. In progressive relaxation, the subject exercises the "will" to relax, and success is dependent on habit formation.

Emotional Activity Involves Motor Element.—Mental and emotional activity always involves a motor element. On the basis of his experiments with intelligent subjects, the author concludes that a tenseness of muscles of the ocular region accompanies visual imagery. With complete ocular relaxation, the image disappears. Auditory imagery is similarly associated with a sense of tenseness, felt perhaps in the auditory apparatus but characteristically in the ocular muscles. When the subject succeeds in maintaining the imageless state for a relatively prolonged time, natural sleep ensues. "Nervous individuals tend to rehearse their griefs, difficulties and problems, considering incessantly and perhaps incoördinately what to do about them; and this emotional reflection is a fountainhead of nervous hypertension, which relaxation mechanically shuts off."

Therapeutic Application.—Dr. Jacobson believes this method of obtaining rest has possibilities of widespread therapeutic application. In some disorders, it may be used as the principal or only method of treatment, while in others it may be regarded as an adjunct to other medical or surgical treatment. An Analysis of the 81 cases treated under his direction by relaxation alone reveals that most of them were conditions dependent upon or related to neuroses or psychoses. The list of pathologic conditions treated includes nervous hypertension, chronic insomnia, convulsive tic, esophageal spasm, Graves' disease, mucous colitis, spastic paresis, stuttering, stammering, and others. In this series of 81 cases he reports objective results in terms of improvement as follows: Slight, 13; marked, 28; very marked, 36; doubtful, 4. Equally good are the results of cases in which supplementary dietetic or surgical treatment was indicated and used.

Is the Method Applicable to Tuberculosis?—Little mention of tuberculosis is made in the book, perhaps for the reason that the author's research has been concerned primarily with the treatment of conditions more definitely dependent upon, or associted with, neuromuscular tensions. Since, however, rest is the pillar on which the treatment of this disease depends, it would seem worth while to investigate the possibilities of this method for tuberculous patients. How common it is to see patients "taking the cure" harassed by worries of home, depressed by prospects of the future, fidgety for want of something to occupy the mind and hands, restless from long waiting, and impatient to have done with the tedium of institutional regimen. Merely "guarding the bed," as the Germans say, is one way of enforcing a degree of rest, but it is not of the kind from which maximum benefit is derived.

THE WEST VIRGINIA MEDICAL JOURNAL

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PRESIDENT'S PAGE

THE LADIES' AUXILIARY of our State Association deserves the enthusiastic support of not only the organized profession but of the individual physician as well. The organization of the ladies can be of great value to the physicians if directed aright and given the necessary encouragement and support by the doctors themselves. The National Auxiliary is sponsoring a movement to have the state bodies support public health activities in an educational way. As a corollary to this, we would suggest the propriety of their including in the educational work support of the Periodic Health Examination and of the Early Diagnosis Campaign sponsored by the National Tuberculosis Association. Still another proper function would be the development of an idea which is now being considered by our own State Auxiliary: namely, the founding of scholarships for worthy medical students. While such a plan would have to be worked out in some detail, there is much to commend the idea. The financial demands of medical education are such that the profession is being recruited more and more from the sons of the well-to-do, and anything which makes for what might be called financial democracy among medical students is certainly worthy of serious consideration.

Probably as large a field of usefulness for the Auxiliary as any other is the development of its social life. It seems to us that we have noticed the gradual development of a better fraternal spirit among physicians since the Auxiliary has been organized; due, we believe, to the increased social commingling which has resulted. Physicians as a class are intensely individualistic—made so by the nature of their work and by their patients—at times so individualistic as to be almost asocial. The Auxiliary can, by the development of its social activities, do much to foster the spirit of true fraternity which should prevail among doctors everywhere.

Walter E. West

EDITORIAL

The Cost of Medical Care

Within the last few years a great hue and cry has been raised in many quarters about the increased cost of medical care. This question has been especially stressed by certain great and would-be great welfare workers and social reformers, apparently without due consideration of the conditions of or the comparative increase when the cost of necessities, and, for that matter, luxuries, is considered. By permission of both the author and the publishers, we reproduce elsewhere an article by Dr. Morris Fishbein, published recently as an editorial in *The Outlook and Independent*. The author, one of the clearest thinkers and incisive writers in the medical profession today, goes into the subject carefully and explains why the cost has increased, making an excellent comparative showing. We congratulate *The Outlook and Independent* upon its policy of publishing enlightened comment upon all the questions of the day, and extend our thanks for this particular article, which we commend to our readers. The more fully the laity understands the problems of medicine, the better for both the profession and the populace.

Summers County Sets Pace

The Summers County Medical Society in Southern West Virginia is the first county society in the state to report its membership 100 per cent paid up for 1930. Not satisfied with this record, this society held a meeting at Hinton in February with every member in attendance. With three new members added to the Summers County Medical Society this year, its record is highly commendable.

The Hancock County Medical Society also has its 1930 membership 100 per cent paid up, having collected 1930 dues from each member when the society was reorganized last November. Dr. F. B. Harrington, of Weirton, is secretary of the Hancock county society, and Dr. J. S. Fisher, of New Cumberland, is president. Dr. A. P. Hudgins, of Hinton, is secretary of the Summers county society, and Dr. J. F. Bigony, of Hinton, is president.

Both of these societies are comparatively small, but their meetings are well attended and their programs are of the highest order. Perhaps the type of programs put on by these societies is responsible, to a large extent, for their splendid records.

The Hospital Number

THE WEST VIRGINIA MEDICAL JOURNAL is unusually fortunate in being able to present a Hospital Number. This special issue was made possible by the large number of excellent papers on hospital work and hospital management that were presented at the annual meeting of the Hospital Association of West Virginia held in Charleston last December. These papers, which were all submitted for publication, form the nucleus of the present issue.

It is the hope of the publication board of the JOURNAL that a special Hospital Number can be issued each year, a short time after the state hospital meeting. If this can be done, next year's issue will unquestionably be better than the present one. If the hospitals in West Virginia can come to look forward to a special hospital issue of the JOURNAL each year, it is safe to assume that a wealth of material will be available when the next Hospital Number is ready for the press.

COMMUNICATIONS

Anti-Vivisection Bill

The West Virginia Medical Journal:

At each session of Congress the Society for the Prevention of Cruelty to Animals introduces a bill to prevent vivisection for scientific purposes. This, of course, would apply only to the District of Columbia. They have never been able to pass one of these bills; but this past year, on December 20, 1929, Mr. Zihlman, of Maryland, introduced a modified bill which is made to apply to dogs only, which reads as follows:

"*Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled:*

"That from and after the passage of this act it shall be a misdemeanor for any person to experiment or operate in any manner whatsoever upon any living dog, for any purpose than the healing or curing of said dog, in the District of Columbia.

"Sec. 2. That any person convicted of a violation of this act shall be sentenced to pay a fine of not less than $100 nor more than $500, or undergo imprisonment for a term of not less than three months nor more than one year, or both such fine and imprisonment.

"Sec. 3. That all acts or parts of acts inconsistent herewith are hereby repealed."

So that, by making an exception of the dog, and making the scientists use the other animals, such as

monkeys, pigs, guinea pigs, rats, mice, cats, and rabbits, they can make a play upon sentimentality of the members of Congress and secure the entering wedge to prevent vivisection.

If this bill should be passed it would be the signal for the introduction of such bills in the legislatures of the entire United States, and it would bring to an end practically all medical investigation. We would lose prestige throughout the world, because the majority do not understand that Congress does not fully control the laws of the entire United States.

It is very important that the Medical School individually, and its backers throughout the state, take action at once to prevent the passing of this bill. The chairman of the committee to which this bill has been referred is Hon. Frank L. Bowman, from this district. Letters should be addressed to him and also to the other members of Congress, as well as our two Senators, to induce them to prevent the passage of the bill.

In reply to my letter protesting against the passage of this bill, Mr. Bowman asked why we could not use these other animals and spare the dog, and I have replied that the dog, because of his human sympathies, is the only animal that will coöperate with the investigators in carrying on the work, and that a very large part of the progress that has been made in the study of human ailments has been made because the dog has been used for experimentation, because of the fact that the anatomy of the dog is very much like that of man and so lends itself to experimentation.

I am sending you a copy of the bill, and it would be well to have a number of the prominent medical men of the state write to our representatives and senators as soon as possible, before the damage is done.

Yours truly,

JOHN N. SIMPSON, M.D., *Dean,*
The School of Medicine,
West Virginia University.

ANNOUNCEMENTS

State Examinations

The next meeting of the West Virginia Public Health Council for licensure will be held in Charleston on April 8 to April 10, 1930, it has just been announced by Commissioner W. T. Henshaw. The examination will be held through the three days and there will be approximately fifteen candidates, it was said.

Society for Crippled Children

The ninth annual convention of the International Society for Crippled Children, Inc., will be held at the Royal York hotel, Toronto, Canada, on March 17–19, 1930, according to the program which has just been released. Arrangements are being made to secure special railroad rates for all persons desiring to attend the convention.

Medical College of Virginia

Dr. George E. Vincent, retiring president of the Rockefeller Foundation, will give the commencement address at the Medical College of Virginia, Richmond, on Tuesday, June 3. At this time approximately 190 will be graduated from the schools of medicine, dentistry, pharmacy, and nursing.

OBITUARY

Mrs. James R. Bloss

Mrs. James R. Bloss, of Huntington, died on February 11, 1930, following an illness of two weeks' duration. She had been in ill health for several months prior to her death. The immediate cause was purpura hemorrhagica. Funeral services were held from the home on February 13, and interment was made at Huntington.

COUNTY SOCIETY NEWS

Parkersburg Academy

Dr. B. O. Robinson, of Parkersburg, was elected president of the Academy of Medicine of Parkersburg at the annual election in January. Dr. Robinson has succeeded Dr. Harry M. Campbell, of Parkersburg, who served a successful administration in 1929. Dr. Paul Starkey, of Ravenswood, was elected vice-president at the January meeting, and Dr. John T. Goff, of Parkersburg, was reëlected secretary-treasurer.

Delegates to the state meeting at White Sulphur Springs next May will be Dr. John T. Goff, Dr. C. L. Muhleman, Dr. T. L. Harris, and Dr. R. H. Boice. Alternates will be Dr. C. E. Park, Dr. O. D. Barker, and Dr. Claud Grimm, of St. Marys.

JOHN T. GOFF, Secretary.

Ohio County

The Ohio County Medical Society held its first February meeting at the Elks' Club, Wheeling, on the evening of February 7, 1930, at 8:30 o'clock. Dr. Myron Metzenbaum, of Cleveland, Ohio, fur-

nished the scientific program of the evening with a most interesting paper on "Nasal Function Restoration: Indications and Benefits," illustrated. Discussion was opened by Dr. Ivan Fawcett and Dr. R. A. Tomassene. Dr. Metzenbaum held an operative and diagnostic clinic at the Wheeling Hospital at ten o'clock on the morning of February 7, which was widely attended by Ohio county physicians and surgeons.

Dr. Grover C. Weil, of the University of Pittsburgh, Pittsburgh, Pa., was the scientific essayist at the February 21 meeting of the Ohio County Medical Society, which was held in the Elks' Club at Wheeling. Dr. Weil read a highly interesting paper on "The Later Management of Major Traumatic Cases." Discussion was opened by Dr. W. P. Sammons, Dr. D. M. Aikman, and Dr. C. H. Clovis, all of Wheeling.

Dr. Joseph L. Ce Courcy, of Cincinnati, Ohio, was the scientific essayist at the January 31 meeting of the Ohio County Medical Society, which was held in the Elks' Club at Wheeling. His subject was "Surgical Goiter," illustrated with lantern slides. Discussion was opened by Dr. J. R. Caldwell, Dr. R. B. Bailey, Dr. Leon Renneker of Cincinnati, and Dr. Minges of Cincinnati.

A buffet lunch was served at the close of this meeting.

H. W. BOND, Secretary.

Raleigh County

The regular meeting of the Raleigh County Medical Society was held at the Black Knight Country Club on the evening of February 20, with nineteen members and three visitors in attendance. An excellent dinner was served at the country club to the members and visitors, after which Dr. A. U. Tieche, president, called the meeting to order. The scientific program was furnished by Dr. A. P. Hudgins, of Hinton, who read a most interesting paper on "Negative Wassermann Syphilis," with case histories.

The applications for membership of Dr. K. G. Khorozian, of Pineville, and Dr. R. H. Edwards were received and referred to the board of censors. At the business meeting the Porter narcotic bill was also taken up for consideration, and the society concurred in the attitude of the American Medical Association relative to the defeat of this bill.

Delegates to the state meeting at White Sulphur Springs next May were elected at the February 20 meeting, together with alternates. The delegates will be Dr. George P. Daniel, Dr. M. C. Banks, Dr. J. E. McKenzie, and Dr. W. W. Koiner. Alternates will be Dr. George W. Johnson, Dr. E. S. Dupuy, and Dr. W. W. Hume.

W. W. KOINER, Secretary.

Greenbrier Valley

The regular meeting of the Greenbrier Valley Medical Society was held in the office of Dr. H. C. Salter at Marlinton on the evening of February 5, 1930, with an excellent attendance. With but two exceptions, every doctor in Pocahontas county was present. The scientific program was furnished by Dr. Norman R. Price, who read an interesting paper on "State Medicine," and by Dr. G. L. Hull, of Durbin, who talked on the needs of medical legislation in West Virginia. Dr. Hull is a most forceful speaker, and his instructive address was one of the best ever presented before the society.

Cases were reported by Dr. J. M. Cofer, of Slaty Fork, and by Dr. J. W. Compton, of Ronceverte, both of which were freely discussed. Following the meeting, a delightful buffet luncheon was served by Dr. Salter. This meeting had the old-time spirit and the Greenbrier Valley society felt very grateful to the physicians of Pocahontas for making it such a big success.

Eight new members of the society, all from Pocahontas county, were admitted to membership at the February 5 meeting. These were Dr. H. C. Salter, Dr. J. W. Price, Dr. J. M. Yeager, and Dr. O. A. Howard, of Marlinton; Dr. G. F. Hull and Dr. A. E. Bruner, of Durbin; Dr. W. T. Cambrone, of Mace, and Dr. L. M. McCutcheon, of Frank.

H. L. GOODMAN, President.
A. D. FERRELL, Secretary.

Lewis County

The Lewis County Medical Society held its regular meeting at the State Hospital at Weston on the evening of January 7. The scientific program was presented by Dr. H. R. Sauder, of the Wheeling Clinic, Wheeling, on the subject, "Early Diagnosis of Chronic Heart Disease." Discussion of the paper was opened by Dr. R. B. Bailey, also of the Wheeling Clinic, and was entered into by a number of the members present.

Dr. Cecil Denham, superintendent of the State Hospital, was reinstated to membership at the Jan-

uary 7 meeting, and three new members were admitted into the society. They were Dr. John E. Corkrean, of Jane Lew; Dr. J. A. Porter, of the State Hospital staff, and Dr. Harvey Andrew, of Weston. Present at the meeting were Dr. W. H. Greene, president; Dr. George Snyder, Dr. A. F. Lawson, Dr. Harvey Andrew, Dr. W. P. King, Dr. C. B. Rohr, Dr. Denham, Dr. Porter, Dr. W. T. Smith, Dr. E. T. W. Hall, Dr. S. H. Burton, Dr. Corkrean, Dr. Bailey, and Dr. Sauder.

The Lewis County Medical Society met jointly with the Weston Rotary and Lions clubs at the First M. E. Church, Weston, on February 10, 1930. Members of the women's clubs and other organizations of Weston were also in attendance, and an excellent chicken dinner was served. The program was presented by Dr. A. T. Post and Dr. R. C. Hood, of Clarksburg, who told of the work of the state health council for crippled children. Dr. Post is state chairman of the organization. A fine musical program was also rendered during the evening. Distinguished visitors in attendance included Judge Roy Waugh, Attorney Hymes, and Professor Leubbers of Buckhannon; Carey Woofter and Dr. W. T. Smith of Glenville, and about fifteen members of the society of Weston and Lewis county.

O. L. HUDKINS, Secretary.

Marion County

The Marion County Medical Society held its regular January meeting at Fairmont, with an attendance of 43 members. The program was featured by the showing of a three-reel moving picture entitled, "Indirect Inguinal Hernia." Dr. D. J. Kindell, medical director of the Consolidation Coal Company, was admitted to membership at this meeting.

PHILIP JOHNSON, Secretary.

Kanawha County

Two very successful meetings of the Kanawha Medical Society were held during the past month in the meeting room of the West Virginia State Medical Association in the public library building, Charleston. The first was held on February 4, with Dr. W. W. Point and Dr. G. G. Irwin furnishing the scientific program. The second meeting was held on the evening of February 18, when the scientific program was furnished by Dr. R. H. Walker and Dr. John Bankhead Banks.

Dr. Point's paper was read, on the subject, "The Average Case of Pregnancy and Labor," and discussion was opened by Dr. R. E. Woodall. Dr. J. U. Rohr opened the discussion of Dr. Irwin's moving picture, which was titled "Benign Hypertrophy of the Prostate." Dr. Walker presented an interesting case report on "Rupture of the Rectum," and Dr. Banks presented a splendid paper on "Acute Appendicitis."

The Kanawha Medical Society plans to hold its next meeting on March 4 at the Daniel Boone Hotel, Charleston, at which time a dinner will be served and the Auxiliary members invited. Dr. James Mitchell, of Washington, D. C., will present an illustrated talk on the Beebe expedition, as well as a scientific paper. Bridge tables will be arranged to accommodate the ladies and guests while the scientific program is being presented.

The Kanawha Medical Society recently decided to set aside a sum not to exceed $120 with which to purchase books and medical journals for the state medical library.

D. N. BARBER, Secretary.

Fayette County

The Fayette County Medical Society met at the Hill Hotel, Oak Hill, on Tuesday night, February 18, with the belief that it has become necessary to carry out a more active program in public health matters. The society discussed the practice of various drug stores as well as individuals who are practicing medicine contrary to the laws of the state and, therefore, liable to prosecution.

The scientific program consisted of a paper on "The Maxillary Sinus," by Dr. G. A. Smith, of Montgomery; a case report by Dr. C. L. Woodbridge, of the Montgomery Clinic, Montgomery, and three reels of film on "Infections of the Hand," which were shown with the new moving-picture machine presented to the society by Dr. Gory Hogg, of Harvey. Twenty-eight per cent of the membership was present.

Summers County

The regular meeting of the Summers County Medical Society was held at the Hotel McCreery, Hinton, on the evening of January 30, with a 100 per cent attendance. The meeting was preceded by a dinner at the hotel. Following the dinner, Dr. J. F. Bigony, of Hinton, was elected president, to serve during the coming year, succeeding Dr. G. L. Pence, who served during 1929. Dr. A. P. Hudgins was reëlected secretary-treasurer.

Two new members were taken into the society

at this meeting. They were Dr. J. T. Johnson, of Sandstone, and Dr. J. C. Bigony, of Hinton. The transfer from Summers to Raleigh county of Dr. F. L. Banks, formerly of Hinton, was reported. The society voted unanimously as favoring the reinstatement of the medical defense fund of the West Virginia State Medical Association.

Monongalia County

The regular monthly meeting of the Monongalia County Medical Society was held in the Junior High School library, Morgantown, on the evening of February 4, 1930. The scientific program was presented by Dr. D. C. Clark, on "Oral Focal Infection," and Dr. R. C. Farrier, on "Relationship Between Public Health and the Physician." This was a good meeting and was well attended.

G. R. MAXWELL, Secretary.

McDowell County

Dr. C. F. Hicks, of Welch, opened the scientific program at the February 12 meeting of the McDowell County Medical Society, which was held in the city building at Welch. His subject was, "Some Practical Points on the Treatment of Fractures." Members present were Dr. J. Howard Anderson, Dr. W. C. Hall, Dr. S. A. Daniel, Dr. J. L. McCarty, Dr. R. C. Newkirk, Dr. G. P. Evans, Dr. H. G. Camper, Dr. C. F. Hicks, Dr. Ralph Counts, Dr. G. L. Straub, Dr. A. R. Lutz, Dr. LaPrade, and Dr. A. G. Rutherford.

Dr. Hicks' paper was in true accord with his great and varied experience in the treatment and handling of fractures. He began his remarks by placing emphasis on the complete reduction and close approximation of fragments of all fractures. He took up in detail the treatment of Colles fractures and fractures about the elbow, especially those of the distal end of the humerus. He stressed the importance of application of a plaster-of-paris cast to immobilize these fractures, instead of ready-made splints, being of the opinion that these splints were nearly always either too large or too small and did not fit the contour of the individual's bony prominences as well as the plaster cast. Dr. Hicks then discussed at length the treatment of fractures of the femur. He brought special emphasis on the open reductions as advocated by Dr. William O'Neill Sherman, and on the closed reduction as advocated by Dr. Willis C. Campbell. He saw both of these men reduce fractured femurs at a recent meeting of the American College of Surgeons. Dr. Hicks seemed to be in favor of the closed reductions whenever there was a possible chance of a reduction with this method.

The discussion was opened by Dr. A. R. Lutz, who emphasized the importance of good radiograms before attempting the reduction of fractures, when the patient had been admitted to the hospital. He put special stress on obtaining good lateral pictures as well as anteroposterior views on all injuries of the spine. He gave his personal experience and observations in the selection of proper anesthetics for the reduction of fractures, believing that the reduction of all fractures should be done under complete anesthesia; but he was of the opinion that a general anesthesia was seldom necessary in case of fractures of adults, using, instead, infiltration of novocaine, nerve blocks, or spinal anesthesia. He mentioned the spinal anesthesia for all open and closed reductions of the lower extremities. The infiltration method with 2% novocaine for the reduction of simple fractures of either upper or lower extremities, and the advisability of using the brachial plexus block for reduction and treatment of compound fractures of upper extremities.

Dr. J. Howard Anderson, in his discussion of fractures of the elbow, did not agree with Dr. Hicks, in view of the fact that he had treated them in the extended instead of the Jones position.

Dr. Newkirk endorsed all that Dr. Lutz had to say in regard to x-ray pictures, believing that no attempt to diagnose or treat a fracture should be made without first having two views, anteroposterior and lateral, and mentioned the fact that in all back injuries a lateral picture should be made.

Dr. Camper, in discussing this paper, especially dwelt upon Colles fractures, and, in his opinion, all Colles fractures should have an anesthetic, and the impaction should be thoroughly broken up under anesthesia. The fracture should then be put in anteroposterior splints, the splints left on three or four days, at which time they should be taken off and very slight, passive motion permitted. If the patient has much pain after the fracture is reduced, this is evidence that the impaction was not broken up and fracture properly reduced.

Dr. A. G. Rutherford, in discussing this paper, mentioned that at the present time no other subject in surgery was of more vital concern to the public and the medical profession than fractures. Many problems which arise in the treatment of fractures are yet unsolved. He stressed the point that judgment plays a big part as to the operability of each case. Judgment is knowledge plus experience.

Judgment and experience is obtained by many years of hard work.

Another big factor in this particular class of work is the confidence a patient has in the surgeon. The next most important thing is the confidence, born of experience, that the surgeon has in himself:

1. To assist both the patient and the surgeon in the securing of accurate records of clinical observations, which can serve as the basis for dependable conclusions.
2. The understanding of the relation of fractures to industry.
3. The necessity for sound ethical practices.
4. The further development of new methods of treatment.

Today there are two great methods of treatment of fractures: the open and closed reduction, or the combination of the two.

In the successful treatment of fractures, there are four ends to be achieved. These four goals may be called the four R's of treatment, *viz.*: (1) the restoration of the individual; (2) the reposition of the fragments; (3) the retention of replaced bones; and (4) the return of the injured man to society, or work.

The first step in these particular cases is to note the exact lesion as revealed by the x-ray. No one should ever attempt to pass upon or treat a fracture without having first made an x-ray picture. The treatment selected, then, will be not only correct, but the best possible, if based on a clear vision of the restoration of the case.

The return of the patient to society means the progress from job to job; that is, from job lost to job secured. The return includes the rehabilitation of the injured part; the restoration of joints, muscles, tendons, nerves, and circulation, and the recovery of function by the damaged part to the greatest degree possible, as early as possible.

All fractures are treated by non-operative or operative methods, or by combinations of these two. The procedures available in the non-operative treatment are: (1) traction and counter-traction; (2) manipulation; (3) pressure and counter-pressure; (4) leverage; and (5) rotation.

Traction and counter-traction may be applied by gravity, manual means, skin hold, and block-and-pulley, with hitch about the ankle or wrist, intermittently, with or without electrically driven motor; and skeletal attachment. The great difference between the non-operative and operative treatment of fracture lies in the procedure of repositioning the fragments. The restoration, the retention, the return of function, all are common to the two methods. The repositioning of fragments is indirect by one method, and is direct by the other method.

"It is my firm conviction," Dr. Rutherford said, "that a chief cause for poor results in the treatment of fractures lies in the failure to recognize certain mechanical forces, and in the inappropriate, imperfect, and inadequate application of the available forces of traction and manipulation. To employ correctly non-operation, or operative, the open or closed reduction, or the combination of both, requires training, a natural mechanical sense, skill, devoted interest, and a good conscience. The two great methods of treatment available today—the non-operative and the operative—are perfected to such an extent that a satisfactory choice of treatment can be made only by the interested, experienced, and skilled surgeon."

HOSPITAL PROBLEMS

"DEAD BEATS" AND PAY PATIENTS *

By ALFRED E. JUDD
Business Executive, Maple Street Hospital
Battle Creek, Mich.

"Dead beats"! We all have them. But some of us are more severely afflicted than others.

The purpose of my paper is to emphasize the relative importance of the prompt collection of the hospital's accounts, if the "dead beat" is to touch us lightly. In the past, too many administrators have considered this matter of collections in all too trivial a manner by assigning the task of bringing in the one thing that "makes the wheels go round" to a subordinate in the accounting department, when it should properly be handled by one experienced in this particular line of work. If such a one can be found, the matter of compensation is of minor importance when considered in the light of increased revenue and added friends. And I mean just that—for the new idea in collections is not to browbeat the debtor into paying, but rather to reason with him, to resell him the service your institution has to offer, to put him again in the frame of mind he was in when he left the hospital—grateful to all for the attention and care that was bestowed upon him. One who can accomplish this will make friends for his hospital and at the same time collect the money due.

* From a paper read before the 1929 Michigan Hospital Association convention, Battle Creek. *Hospital Management*, February, 1930.

May I ask a personal, straightforward question? What proportion of your gross business did you charge off to bad debts last year? Was it as much as 10 per cent? Was it even 5 per cent? Keep the answer in your mind for just a moment. Say, for example, that you did a gross business in 1928 of $1,000,000, and when the year was over it was necessary to charge off to bad debts only 5 per cent. Do you realize that this means exactly $50,000? Now, if you could cut this bad-debt loss in half, you would save $25,000. What if it did cost $5,000 to do this—your institution would still have $20,000 to spend on some good cause.

Perhaps I hear some one say: "That sounds very well in theory, but it can't be done in practice." My answer is that it can be done, and is being done by the more forward-looking hospitals today. It is unfair to those who *do* pay their bills, and unfair to those charity cases unable to pay their accounts, that certain persons perfectly able to pay do *not* pay, and as a result the hospital suffers through the subsequent loss to bad debts.

Let us look at this matter from a strictly business standpoint. Does a merchant allow you to walk out of his store with a $200 fur coat unless he has ascertained the fact that you will pay for the coat as promised? He does not! On the same basis, is there any good reason why you should permit your institution to spend a similar amount of money on an individual without determining in a definite manner where the money is coming from—and when?

For fear some of you will call me hard-hearted, let me go on record as favoring whole-heartedly free hospitalization for the indigent, but favoring not one penny to those able but unwilling to pay!

And now, how can the reduction of bad debts and the vanquishment of the "dead beat" be accomplished? If I can stir up a dormant interest among you along these lines, by suggesting how I *think* it should be done, then I shall feel that my efforts have not been in vain.

First, prospective patients should be classified in the mind of the hospital as pay patients, part-pay patients, charity or free patients. This should be done routinely before the patient is formally admitted—as, for example, the system now in force at the University Hospital in Ann Arbor—except, of course, in accident cases, when it should be done the next day. In cases of this latter type it should be made plain to the patient or his relatives that, regardless of who was responsible for the accident, the hospital expects its pay from the injured individual and refuses in any way to be made a party to any argument between individuals responsible or otherwise. Industrial cases are sometimes a problem, but it is my opinion that regular rates should obtain, and if unable to secure payment from the insurance company, then the manufacturer should be expected to make up the difference. The hospital pays full price for its manufactured products, so why should it not receive full pay for caring for the injured employee of industrial concerns?

Second: Rates for the different services should be fully explained to the pay patients and the terms of settlement agreed upon. Part-pay patients should be apprised of what is expected of them, and the unpaid balance of such an account handled by means of funds from other sources or charged off at the time to charity or some similarly designated account. Free or charity patients are accepted as such and their accounts should be paid by the poormaster or welfare fund; otherwise, they should be directly charged off to charity. From the above it will be seen that bad debts can originate only from the first two classes of patients—the full-pay and the part-pay—by the ultimate refusal to pay for services rendered at a price originally agreed upon between the patient and the hospital.

At least half of your collection problems will be solved by the proper opening of the account, prompt checking of references given, and a report from the local credit association. I am wondering how many hospitals carry memberships in the credit association of their home cities? If you do not, you are passing up one of your greatest allies in your fight to keep the "dead beat" off your books.

For those not acquainted with this particular phase of credit granting, I will show you briefly how the credit bureau in Battle Creek coöperates with its members: John J. Jones comes to our hospital to arrange for the care of his wife, who is to have an operation. We secure the usual information from Mr. Jones and then ask the credit bureau for a report. If they have the information in the files they will give us a verbal report in a very few minutes, perhaps as follows: "John J. Jones, wife, Mary, lives 615 Michigan avenue, machinist for the Grand Trunk railroad; owns his home. Lumber company reports him prompt for $200, department store reports him prompt for $50. No other reports." On the strength of that report, we know

from his past record that he will pay us as he has his other creditors.

On the same day, Harry B. Brown comes to see us and tells us he has decided to have his hernia repaired because it interferes with his work. Report from the credit bureau: "Harry B. Brown, salesman for the Blank Grocery Company, recent connection. Salary about $50 a week. Department store reports account for $35 six months old. Men's furnishings store reports nothing paid on suit purchased three months ago. Mr. Brown has reputation of being a free spender." Do we turn Mr. Brown down on the above report? Not at all. We explain to him that our hospital is run on a cost basis; that the money which is paid in by the patients is promptly disbursed in the payment of help, maintenance, and groceries bought from the concern which he represents; and for these reasons it will be necessary to require a deposit equal to the requirements of his anticipated stay. At times we even suggest the different methods by which the money might be secured, with the result that if Mr. Brown elects to come to our hospital he brings the money with him, feels good because he has paid his bill, and goes away boosting the institution. Otherwise, some other hospital not so careful as we were in looking into his paying habits finds an account of some proportion on its books and is at a loss to know how to proceed with its collection.

I can not emphasize too strongly that all financial arrangements should be made prior to the entry of the patient, whether he be full-pay, part-pay, or free patient. In this way his exact status is determined, and with those who are to pay a definite business understanding is had. This is much easier of accomplishment prior to the rendering of service than afterwards. Why this is true I do not know; but the fact remains that, in a great many cases, appreciation declines in direct ratio to elapsed time following hospitalization.

Another point I should like to make plain is the distinct differentiation between the two general ledger accounts known as bad debts and charity. An account which is entered on the books at regular rates and after a year or more is found to be uncollectible should in no case be charged off to charity. It is a bad debt and should be handled accordingly. On the other hand, when a patient is accepted for care and it is known that the patient is *not* in a position to pay, then this account is not a bad debt, but one of a charitable nature, and the account should be so disposed of.

PUBLIC HEALTH

Communicable Diseases

Diphtheria, scarlet fever and smallpox showed a decline in West Virginia in 1929 in the number of cases reported to the state health department, according to a report recently made public by Dr. David Littlejohn. Typhoid fever, measles, and whooping cough showed an increase. The report dealt only with the cases of the various diseases reported in the state, no figures being given on the deaths resulting, as these figures are not yet compiled.

Dr. Littlejohn pointed out that the extensive campaigns for immunization against diphtheria and vaccination against smallpox which are being carried on throughout the state were responsible in a large measure for the decrease noted. His statement was based not only on the decline in the number of cases in 1929 but also on the decline in expectancy, which is the number of cases expected on the basis of the average of those occurring during the past four years. On this expectancy basis, the diphtheria cases in the state would have reached 1,074, while but 878 were reported as against 953 in 1928. The smallpox expectancy for 1929 was 640, while 573 cases were reported. This was a marked decline when compared with the 1,350 cases reported in 1928. Scarlet fever dropped 400 cases last year, 2,105 cases being reported in 1928 and 1,705 in 1929 .

Typhoid fever showed a slight increase, from 711 cases in 1928 to 884 last year. This, however, was 292 cases less than the average for the four preceding years. An epidemic in McDowell county was responsible for the increase in 1929.

Whooping cough and measles showed a decided increase, 756 cases of measles being reported in 1928 and 2,229 last year, while measles jumped from 3,381 to 6,782.

Diagnosis of Malaria

The studies conducted by the United States Public Health Service relating to the prevention and eradication of malaria assume many interesting phases. A recent report of considerable interest issued by the Service is that relating to a method of preparing and examining specimens of blood from a malaria patient on glass slides for the diagnosis of malaria.

Laboratory workers and others interested in the diagnosis of malaria have recognized the advantages of the thick film method, especially for malaria surveys. An assistant may be easily taught to collect

good specimens and the method has been used widely and is successfully used in field work. Much time is saved in the examination of specimens. When the malaria parasites are at all numerous they are usually seen in the first thick film; when they are rare, they are often detected in the thick film when they might have been missed in a thin film or found only after a long search. The chief purpose of the thick film is, of course, the diagnosis of malaria rather than the study of the characteristics of malaria parasites, a purpose for which the thin film is more suitable.

It is commonly recommended that 15 to 20 minutes be devoted to a thin film before it is declared negative, and five minutes to the thick film. In either case, the time spent on apparently negative specimens must vary with the circumstances. When, for example, the sole purpose is to find a crescent carrier suitable for mosquito-infection experiments, a fraction of a minute will suffice for the thick film. In a clinical case it may be necessary to spend a good deal of time on a film; but here it is usually possible to get a new specimen taken at a time when parasites may appear in larger numbers.

Heart Disease in Childhood

Special reports obtained by the United States Public Health Service from certain states, for 1928, with an aggregate population of approximately 25,000,000, showed that 228 persons out of every 100,000 died from heart disease, as compared with 106 from kidney disease, 105 from cancer, and 100 from pneumonia—the four great killers of mankind. Moreover, these figures do not tell the whole story, because the number of deaths from heart disease is increasing. During the eight years from 1917 to 1925, in the registration area of the United States, the population increased by about one-third, deaths from heart disease practically doubled, and the number caused by heart disease as a contributing factor increased 81 per cent, although the number of deaths from all causes increased only about one-seventh.

Heart disease is particularly a disease of early life. Practically 75 per cent of all cases of heart disease develop in children under 10 years of age, as compared with about 12 per cent in persons over 40 years of age.

In the period 1921 to 1927, 20 out of every 100,000 children from 5 to 19 years of age died of heart disease annually in the registration area of 1920. In other words, in the area comprising 37 states and 82 per cent of the total population of the country, heart disease was the third highest in the list of the causes of death among children. Moreover, of 17,974 school children carefully examined by medical officers of the United States Public Health Service, in Florida, Illinois, and Missouri, over three out of every 100 had heart disease in the proportion of two functional disorders to one due to an organic lesion.

Heart disease may be congenital or acquired. Little can be done to prevent the development of congenital cases beyond increasing attention to the supervision of expectant mothers. Acquired heart disease is most frequently due to improper habits of living and to the infections, particularly those of the rheumatic group. It has been shown that the incidence of certain infections and rheumatic diseases, in association with damaged hearts, is very high: scarlet fever in 12%, diphtheria in 16%, chorea in 15%, rheumatism in 44%, and tonsillitis in 66% of the cases.

Faults of personal hygiene and improper habits, such as lack of exercise, overindulgence in stimulants, and improper food, are very conducive to degenerative changes in the heart muscle. Just how these causative factors operate is not exactly understood. However, they do furnish the clue to the measures to be employed for the prevention and relief of heart disease.

The chief factors in the development of heart damage are rheumatism and the conditions associated with this disease. Rheumatism is now believed to be a germ disease. The suspected germ seems to have certain favored portals of entry to the body, particularly through defective teeth and diseased tonsils. The tabulation of physical records of approximately 5,000 school children, under the supervision of the United States Public Health Service for a period of four years, showed that among the children whose tonsils had been removed, indicating serious tonsillar infection in the past, 20 out of every 100 had attacks of rheumatism and 4 out of every 100 had heart disease. Of the children with defective tonsils, 17 out of every 100 had rheumatism, and approximately 3 out of every 100 had heart disease. On the other hand, of the children who had normal tonsils, only 12 out of every 100 presented any rheumatic symptoms and only 9 per 1,000 had heart disease. These records, which could be extended from other sources, emphasize the importance of rheumatism as a factor in developing heart disease.

In regard to prevention, an understanding of the

underlying causes is of primary importance to the institution of measures to prevent the occurrence and to prolong the lives of those who have developed heart disease. The health habits of all children must be carefully supervised to maintain nutrition, secure adequate rest and sleep, limit activity when necessary, and to avoid infection.

The very marked association of rheumatism with heart disease clearly indicates the importance of the prevention and proper treatment of the rheumatic infections. Children with dental decay or who are subject to repeated attacks of tonsillitis most frequently are subject to rheumatic attacks. Special care must be given, therefore, to the removal of the so-called portals of entry, such as adenoids, diseased tonsils, and decayed teeth. Moreover, since chorea and the so-called "growing pains" of children are most probably manifestations of rheumatic infection, children presenting these symptoms should be placed under constant medical supervision and subjected to repeated examinations in order to minimize any potential damage to the heart.

FROM OTHER JOURNALS

Problems of Immunity

No problems in medicine have been more fascinating than those dealing with the subject of immunity. In a like manner, nothing has changed more often than the theories of immunity. First, immunity was based on resistance to infection. Then Metchnikoff called attention to the part which phagocytes played in protecting the human against the invasion of infectious organisms. Phagocytosis has in a large measure endured to the present day and still plays no small part in the theory of immunity.

Next came Ehrlich's famous "side-chain" theory of immunity, the mastering of which constituted one of the perplexities of the medical student's curriculum about a quarter of a century ago.

Others followed shortly thereafter and were more or less important. In the past decade, however, there has been a school which has come into existence which believes that for each disease there is a certain receptive tissue which acts as the normal portal of entry for the virus, and that a solid protection is conferred upon the individual by a process of "desensitization of the receptive cells." This has been called local immunity. It has also been referred to as cell or tissue immunity. It has not altogether revolutionized the treatment of disease by vaccines and antisera, but it has explained, at least partially, some of our failures in this type of therapy.

In addition, it has opened up new possibilities of prevention and therapy.

Occasion has been taken to review some of the literature on this subject elsewhere in this issue.—*International Medical Digest.*

GENERAL NEWS

New Kanawha Valley Hospital

Construction work on the new Kanawha Valley Hospital, Charleston, will be started within the next thirty days, and the new structure will be completed next fall, with a total capacity of 96 beds. The entire front of the present hospital will be dismantled and the new structure, which will front 67 feet on Virginia street, will cost $75,000. An additional $15,000 will be spent in remodeling and refinishing the back units. When completed, the hospital will be fireproof throughout.

The new structure will be four stories high and will be built with varicolored red brick and limestone

The New Kanawha Valley Hospital, Charleston, W. Va.

trim. Entrance will be from Virginia street into a beautiful hospital lobby, and the first floor will house the hospital offices and the emergency treatment room. The second floor of the new unit will house doctors' offices and wards. The fracture wards will be in the front of the new unit on the third floor, while private rooms with baths, finished with Textone walls, will be in the rear. The fourth floor will house the operating and sterilizing rooms and also private rooms.

The floors of the new hospital will be terraza, with the exception of the business offices, which will

be marble and terraza. A large, modern elevator will be installed in the new unit, in addition to the stairway. The present hospital plant was purchased by the Kanawha Valley Hospital a short time ago and plans for the new unit were started at once. The Kanawha Valley Hospital is accredited Class A by the American College of Surgeons, and, upon completion, will be one of the best and most modern hospital plants in the state.

Officers of the hospital are: Dr. G. C. Schoolfield, president; Dr. G. B. Capito, vice-president; Dr. E. F. Gott, secretary; Dr. W. W. Point, treasurer; Miss Anna H. Bessler, superintendent, and Dr. C. A. Ray, manager.

Saint Mary's Opening

The formal opening of the new $250,000 unit of the Saint Mary's Hospital, Huntington, was held on Wednesday, February 5, 1930. Several thousand persons inspected the new hospital unit during the day, from ten o'clock in the morning until five o'clock that afternoon. At six o'clock a complimentary dinner was served to the staff doctors and to the many Huntington citizens who played some part in the erection of the new unit.

The new unit of the hospital, which is shown in the accompanying photograph, was completed early

New Unit of Saint Mary's Hospital, Huntington, W. Va.

in February at a cost of $250,000, adding 50 beds to the hospital capacity and bringing the total capacity to 90 beds and 10 bassinets. The new structure is modern in every respect and is one of the most beautiful hospital buildings, both inside and out, in the entire state. The superintendent of the Saint Mary's Hospital is Sister M. Carola, R.N., who is Mother Superior of the Pallatine Order in the Western Hemisphere.

Dr. R. M. Bobbitt, of Huntington, vice-chief-of-staff, was the toastmaster at the complimentary dinner, and the Rt. Rev. J. J. Swint, D.D., bishop of Wheeling, was the principal speaker. Other speakers were the Rt. Rev. Msgr. H. B. Altmeyer, Huntington, who talked on "Origin and History of Hospitals"; Dr. Walter E. Vest, of Huntington, president of the West Virginia State Medical Association, who spoke on "The Present Saint Mary's"; Dr. J. E. Rader, of Huntington, who talked on the development of hospital work in Huntington; Mr. H. M. Brown, of Huntington, who spoke on "The Future Saint Mary's," and Dr. W. S. Rosenheim, director of the Huntington Chamber of Commerce, who spoke on "What a Hospital Means to a City."

Reynolds Memorial Hospital

The Reynolds Memorial Hospital at Glendale, Marshall county, was established in 1899 and now has 75 beds and 10 bassinets. It typifies, to a certain extent, the small, efficient hospitals in West Virginia. It is conducted on a rational basis, and no requests for funds have ever been made, as the hospital has always been able to make its own way. It is accredited Class A by the American College of Surgeons, and its first-class training school conforms to the rules of the West Virginia State Nurses' Association.

The Medical Library

Members of the Association throughout the state will be interested to learn that a total of 45 medical journals and periodicals are now being received regularly at the recently established state medical library in Charleston. A complete list of these journals will be found below. Practically all of the medical literature received is sent in exchange for the WEST VIRGINIA MEDICAL JOURNAL, and the library is conducted and kept up to date with little cost to the Association.

Also of interest is the fact that the Kanawha Medical Society, at a recent meeting, decided to expend a sum not to exceed $120 in subscribing for medical journals and in purchasing medical books that are not received at the present time. A committee has been appointed to purchase these subscriptions and a number of new medical magazines will soon be on record. It is understood that this committee expects to add several foreign medical journals to the library list.

All of the journals now received are catalogued and filed each month for ready reference. The library subscribes to the *Cumulative Index Medicus* of the American Medical Association, and this index makes it possible to look a wealth of material on practically every subject pertaining to scientific medicine.

Among the medical journals and bulletins that are now received at the state library are the following:

New England Journal of Medicine.
Journal of the Association of American Medical Colleges.
Pediatric Bulletin.
Hospital Management.
International Medical Digest.
Compend of Medicine and Surgery.
International Journal of Medicine and Surgery.
American Medical Association Bulletin.
Journal of the American Medical Association.
American Medicine
New Orleans Medical and Surgical Journal.
New York Academy Bulletin.
Northwest Medicine.
Public Health Reports.
Hygeia.
Archives of Physical Therapy.
Radiology.
The Radiological Review.
Readers' Digest.
Southern Medical Journal.
Southern Medicine and Surgery.
Surgery, Gynecology and Obstetrics.
American Journal of Surgery.

In addition to these, the state medical journals are received from Missouri, Nebraska, Minnesota, Maine, Kentucky, Idaho, Illinois, Kansas, Delaware, California, Colorado, Ohio, New Jersey, Louisiana, New York, Pennsylvania, Oklahoma, Rhode Island, Virginia, Tennessee, Texas, and Wisconsin.

Lying Labels

Lying labels on medicines and near-medicines may never be entirely eliminated, but the food, drug and insecticide administration of the national government has gone a long way in protecting the public against upscrupulous promoters in the health field through its enforcement of the federal food and drugs act.

Katharine A. Smith tells in *Hygeia* for February how the government's activities have caused the removal of unwarranted claims from labels of medicinal preparations.

Some of these preparations owe their popularity to their high alcohol content. Others contain cocaine or morphine. Sale of these mixtures is particularly reprehensible because in many cases the buyers would have shrunk from them in horror if they had known their real nature.

Lying labels are unfair to honest manufacturers, who are forced into competition with unscrupulous or ignorant purveyors of articles sold to the public under exaggerated claims.

The chief danger in falsely labeled patent medicines, however, is that persons with serious diseases may rely on them until it is too late for reliable treatment to help them. On the other hand, persons with minor ailments are sometimes led to believe that these "medicines" have performed miraculous cures when nature, alone and unaided, would have overcome the trouble.

Government chemists have analyzed thousands of these so-called medicines and have brought about changes in the labels. Yet, in spite of all that has been done, the outbreak of any epidemic is an incentive for bringing to the front a formidable array of alleged preventives and cures, says Miss Smith. The field for quick and easy gains through fraud is too fertile.

American College of Physicians

The fourteenth annual clinical session of the American College of Physicians was held at Minneapolis, Minnesota, on February 10–14, 1930. The convention officially opened on Monday afternoon, February 10, and a scientific program was presented that evening. Clinics were held on the following morning, with scientific sessions the same afternoon and evening. Clinics and scientific sessions were held on Wednesday, Thursday, and Friday, the program ending on the afternoon of February 14.

The annual banquet was held on the evening of February 13, and the Convocation, followed by a smoker, was held on the evening of February 12. There were more than 200 Fellows in the class of 1929–30, including eight from West Virginia. These were Dr. Oscar B. Biern of Huntington, Dr. Milton C. Borman of Montgomery, Dr. A. H. Grigg of Beckley, Dr. W. D. Hereford and Dr. F. C. Hodges of Huntington, Dr. John W. Moore and Dr. H. L. Robertson of Charleston, and Dr. J. T. Thornton of Wheeling.

Among the West Virginia doctors who attended the Minneapolis session were Dr. Walter E. Vest, of Huntington, president of the West Virginia State Medical Association; Dr. H. L. Robertson and Dr. R. D. Roller, of Charleston; Dr. O. B. Biern, Dr. F. C. Hodges, and Dr. R. J. Wilkinson, of Huntington; Dr. A. H. Grigg, of Beckley; Dr. F. J. Collison, of Bluefield, and Dr. J. T. Thornton, of Wheeling.

Cook Hospital Library

Members of the staff of Cook Hospital, Fairmont, have each contributed a sum of money for the enlargement of Cook Hospital Library. The library at present has bound volumes of the *Journal of the American Medical Association* for the past twenty years, and bound volumes of the magazine, *Surgery, Gynecology and Obstetrics*, from 1918 on. A number of physicians have lent recent editions of standard textbooks to the library, and a complete set of Tice's *System of Medicine* has been purchased. These, together with a set of Keen's *Surgery* and excellent books on anatomy, obstetrics, pediatrics, gynecology, ear, nose and throat, physiology, and a new dictionary, makes a well rounded-out library, suitable for detailed reading or reference work.

Suits for Malpractice

We should like to congratulate the country on acquiring so great a lawyer as Charles Evans Hughes as chief justice of the United States Supreme Court. Lawyers are a great body of men, and a good one is perhaps the clearest approach to an ideal citizen that any country can boast about. To clarify human conduct into what is basically right and what is inherently wrong is a splendid achievement, provided it is done with a clean heart and an honest purpose. We have from time to time flagellated the law—in good humor, of course—but no more than we have our own calling, and, we hope, with the purpose of improvement always in mind.

There is a class of physicians who are skillful and admirable in every way except that they will lean to little borderline practices which are not in accordance with the best experience of their colleagues. We suppose they were the little boys who stuck pins in the flies and hunched out of pure wantonness in a game of marbles. Just so in any community there are lawyers who gravitate toward suits against the medical profession. We have had high-class lawyers tell us they would never accept suits against the medical profession, for, while there might be one now and then with some merit, the majority of them were a plague before the finish. But some lawyers seem to extract some enjoyment or peculiar reaction in the prosecution of such claims. It is no coincidence to note that these malpractice and other such suits generally fall to one or two lawyers in each community. Very often—and this passes our understanding—these same barristers are the very ones who have often found a great deal of comfort and satisfaction in employing good physicians. Stranger still, these very lawyers are generally pretty well liked and honored by medical men outside of their professional occupations. The whole thing is quite puzzling.

Of course, they say, "Why should not the medical profession be prosecuted? Are they different from anybody else? Have they a peculiar gift or grace from God that should save them from litigation and the courts? The answer is that they have not, in matters outside of their profession. This sounds rather queer to the average layman. If doctors park by a fireplug, give them a ticket. If a doctor gives his name in as president of a false oil company, arraign him with the others. If he absconds with funds, let him taste the fruits that go with embezzlement. If he murders, hang him.

But, professionally, he is entitled to a different consideration, because his work is with a complicated, complex, comprehensive human machine, no two of which are alike. This in health. To add to the aggravation of the situation, the diseases which attack this human machine scarcely ever behave the same in two cases. The third dilemma is that the diseases, as well as their microörganisms, are constantly maneuvering their habits so that the fashion in pneumonia ten years ago was not really what it is today. Then, lobar pneumonia predominated. Today, it is bronchopneumonia. Fourthly, there are innumerable mysterious forces in the blood, of which we have as yet not the mastery. All these play a big part in healing. Hormones, endocrines, reticuloendothelial cells, blood platelets, alkaline reserves, secretory mechanisms, immunities, precipitins, agglutinins, hyoscines, toxins, antitoxins, lipoids, and what not, still elude us. Vitamines are known only by exclusion. As long as this is the case, a doctor may do for his case every known human expedient and still have it go wrong in such a manner a suit might be brought on the outcome.

Consider the protective side. Can you conceive of any body of men in any vocation today who make protective and preventive measures the passionate occupations doctors do in theirs? A railroad has its block-signal system, but it is as nothing compared to what you see doctors doing every day of their lives to make their patients safe. First of all, doctors go away out of their way to keep people from being sick at all, and with their preventive medicine they are the only calling we know about who tries laboriously to prevent what is their livelihood.

Look at an operation. Marvelous technique—and for what? Why, to protect patients from all germs.

Sensitization tests. Yes—and why? To make sure the patient can take an antitoxin. Always and everywhere trying to use elaborate detail to prevent anything happenings. Not waiting until it does occur, but striving to make it impossible for it to occur.

Take the question of leaving a sponge in the abdomen. We are willing to have a committee of laymen anywhere go into any first-class hospital and investigate the use of sponges by any good surgeon. If they can suggest any human way superior to what is in force, we are willing to hear of it. They simply can not do it. It is not perfect, but it is the best that thousands of surgeons can contrive. And if a surgeon uses the best there is to use, what more can you ask? The instruments. It is rarely, considering the thousands of operations done, that this happens. But look down in that complex, complicated abdomen, remember its contents must not be overhandled; that rapid closure is often necessary to save life; that very few instruments go down into it to remain alone for any length of time; and you can see here again all things are done in order and with all contingencies in mind.

It is inconceivable, then, that any doctor or surgeon is going to complicate his results with carelessness here. He is operating to save or heal. Why should he be rash enough to erase it all with culpability? We have been around an operating room for thirty-two years and we have never yet seen a surgeon conducting an operation without all protective measures in mind. It may occur, but we have never seen it. We know of one doctor being sued because a patient had a discharging wound for some time. It was argued the length of time should have made him do something, whereas the very surgeon himself operated upon by one of the world's greatest surgeons had a similar wound discharging for thirteen months, and the great surgeon took the same attitude towards his surgeon-patient that the surgeon-patient did to his patient. "Verily, do unto others as you would have them do unto you."

We can not think of Charles Evans Hughes prosecuting the surgeon or specialist who is treating ex-President Taft, and yet it is conceivable that that physician might make some mistake, as do we all. The next time one of these lawyers who seems to like to give us trouble is tempted to listen to some idle tale, we trust he remembers some of these things. Especially do we hope that one of these lawyers we all like so well personally, and who are our friends, will take this to heart and reason it out. If, after doing that, he still thinks these adversities he sees are due to wanton carelessness on our part, then all right and good—go ahead!

Health Study of Prisons

The completion of the first comprehensive survey of American prisons and adult reformatories from the point of view of health and medical service is announced by William B. Cox, secretary of the National Society of Penal Information, following the recent publication of the *Handbook of American Prisons*. In a summary of the reports made by investigators, the medical survey says, in part:

"The prisons of many states are a part of the political spoils system, the chief administrative officers changing with each change in state administration. With few exceptions, the prison hospitals are all greatly understaffed for the work there is to be done. Reliance is placed on inmate help for the greater part of the hospital work. In very few prisons was the work so organized that the physician was the administrative head of all the health and hospital activities. The equipment in many prison hospitals leaves much to be desired when compared with modern hospital equipment.

"The value of recreation and entertainment as an aid to the mental and physical health of the inmate and to lessen disciplinary measures in prison is being more and more appreciated. To provide wholesome recreation is no longer considered coddling.

"Health education is badly neglected in prisons. Little effort is made to enlighten the inmate regarding health matters, except as he comes in contact with the medical personnel during sick call or when in the hospital. The lack of medical personnel is largely responsible for the neglect of this practice."

The survey concludes:

"The physician should be appointed on ability alone, without regard to political consideration.

"He should hold his position so long as he renders satisfactory service.

"All health activities of the prison should be under the responsible direction of the prison physician, in order that they may be properly coördinated with the industrial, educational, recreational, and disciplinary relations of the inmate.

"Prison hospitals should have an increased medical personnel. Prisons with 500 inmates should have one full-time physician, and those over 1,000 in population should have an additional physician for each additional 1,000 inmates or a substantial percentage of that number.

"Effort should be made to do all constructive

surgery and other rehabilitation work while the inmate is available, so that he may return to society with as few physical handicaps as possible.

"Actively tuberculous inmates should be transferred to a hospital or sanatorium designed for this purpose. They should not be paroled to friends or relatives unless such friends or relatives are able to give them adequate care.

"A separate institution, or at least complete segregation, should be provided for the care and treatment of drug addicts."

"Insane prisoners should be removed from penal institutions to hospitals for the treatment of mental diseases.

"Prison diets should be organized with less meat and a larger number of vegetable dishes, particularly coarse vegetables, such as spinach, cabbage, turnips, and string beans.

"Definite organized recreation should be provided for all inmates in keeping with their physical condition. The value of this for health and disciplinary purposes is so well established that it should be made compulsory.

"Health education should be provided for all inmates. This could take the form of movies, lectures, articles in the prison publication, courses in hygiene in the prison school, literature from state and local health departments, and personal advice when the prisoner comes in contact with the medical department."

Liver Extract No. 343

The Council publishes a report of the Committee on Pernicious Anemia of the Harvard Medical School. This report states that in May, 1927, the Committee on Pernicious Anemia of the Harvard Medical School was organized to study the properties and to determine the clinical value of the fractions of liver that were being extracted, and to determine in what way a satisfactory product could be made available. Under direction of this committee, Eli Lilly & Co. offered to manufacture one of the extracts developed. The function of the committee was merely to supervise the production of a suitable extract of known potency until such time as the medical profession should have become accustomed to its use. The treatment of more than 100 cases of pernicious anemia with this extract indicated that a satisfactory product was available and it was accepted by the Council on Pharmacy and Chemistry for New and Non-official Remedies, under the name "Liver Extract No. 343." For the past year Eli Lilly & Co. has regularly produced lots of material, every one of which has been shown to be clinically effective in the treatment of pernicious anemia, by a standardized process approved by the committee. The committee now feels that its function of developing a reliable commercial product has been accomplished, and that it may therefore cease actively to supervise the manufacturing process. (*Journal A. M. A.*, October 12, 1929, p. 1144.)

MEDICO-LEGAL

HOSPITAL RECORDS *

By CLEMENT WOOD BIDDLE, LL.D.
Philadelphia, Pa.

From the standpoint of law, is the insurance company (life, liability or accident carrier) entitled to get or the hospital to give all the data asked for from the hospital records?

Really, there are two questions, one involving the rights of the insurance company, the other the rights and duties of the hospital.

Frankly, in my judgment, a discussion from the legal standpoint is not very helpful and does not go far toward a real solution of the problem, which is a practical rather than a legal one.

Categorically, the answer to the question subdivided into two is:

The insurance company has no legal right to obtain any information from the hospital or its records, or from the attending physicians, nurses or other assistants, for the purpose of enabling it to adjust its affairs with the patient. The insurance company's only legal right is to subpœna the official having charge of the records, the attending physicians, nurses, and others having knowledge, to appear in court at the trial of the issue and obtain the information at that time by examination in court. The trial judge then protects the rights of the patient with regard to certain privileged communications by the patient to the physician, a subject which will be touched upon later.

The hospital records are private records which neither the insurance companies nor any one else has the legal right to see or examine against the objection of the hospital, except by means of producing them in court upon a subpœna.

From the legal standpoint, under an act of the Pennsylvania Assembly dated June 7, 1907, the hospital has no right to give any data from its records

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* Reprinted from *Hospital Management*, February, 1930.

disclosing communication to a physician or surgeon attending a patient in a professional capacity which were necessary to enable the physician or surgeon to act in that capacity, which would tend to blacken the character of the patient, without the patient's consent, except in civil cases brought by the patient for damages on account of personal injuries. It is the duty of the hospital to guard from disclosure communications falling within the provisions of the above act of the Assembly, unless the patient has given his full and complete consent.

From the legal standpoint, the hospital is not restricted from giving out other information, and may do so; but the extent of the information to be given out, the form in which it will be given, the persons to whom it will be furnished, and other conditions and restrictions upon the giving out of information are matters entirely within the control and discretion of the hospital.

The distinction between the legal rights and the proprieties with respect to information about a patient is nowhere better expressed than by Lord Mansfield in the leading English case, decided in 1776, the Duchess of Kingston's trial, which established the law of England to be that no information obtained by a physician or surgeon in attending a patient in a professional capacity is privileged where the information is material in a civil or criminal case. In that case Mr. Hawkins, the physician, was asked whether he knew from the parties of any marriage between them. He replied that he did not know how far anything that had come to him in a confidential trust in his profession should be disclosed consistent with his professional honor. Lord Mansfield replied: "Mr. Hawkins will understand that . . . a surgeon has no privilege, where it is a material question in a civil or criminal cause, to know whether the parties were married or whether a child was born, to say that his introduction to the parties was in the course of his profession and in that way he came to the knowledge of it. . . . If a surgeon was voluntarily to reveal these secrets, to be sure, he would be guilty of a breach of honor and of great indiscretion; but to give that information in a court of justice, which by the law of the land he is bound to do, will never be imputed to him as any indiscretion whatever."

This case established the common law of England, which is applicable to Pennsylvania, to be that no communications by a patient to his physician or surgeon are privileged upon the trial of a case in court.

This was expressly recognized to be the law in Pennsylvania prior to a statute of 1895, which has since been superseded by the act of 1907 referred to above. *Wells* vs. *Insurance Co.*, 187 Pa. 167, which held, in effect, that a statement by a patient to her physician that she had had six previous abortions and always gotten well should have been admitted in evidence in a suit on a policy of insurance upon her life.

In Pennsylvania, therefore, information obtained by a physician, acquired in attending the patient professionally, is privileged or protected from disclosure in court only to the extent that it falls within the provisions of the act of 1907. The act is entitled, "An act to prevent physicians and surgeons from testifying, in civil cases, to communications made to them by their patients, except in civil cases brought by their patients for damages on account of personal injuries."

It provides:

"Section 1. Be it enacted, etc., that no person authorized to practice physics or surgery shall be allowed, in any civil case, to disclose any information which he acquired in attending the patient in a professional capacity, and which was necessary to enable him to act in that capacity, which shall tend to blacken the character of the patient, without consent of said patient, except in civil cases, brought by such patient, for damages on account of personal injuries."

The act has been construed in two recent cases by the Pennsylvania Supreme Court. In the later of these cases, *Phillips' Estate*, 295 Pa. 349, decided in 1929, the court held that the language in the body of the act was limited by the title, which refers to "communications made . . . by their patients." "Communications" was held to mean information by speech or writing, and excluded information obtained as the result of a physical examination by the doctor. The physician's testimony in that case, which the Supreme Court held should not have been excluded by the lower court, was to the effect that the patient, who was deceased, was suffering from paresis and was not competent to make a will; that paresis could result only from syphilis, without stating whether in the particular case it was inherited or arose from the patient's personal actions.

The Pennsylvania act of 1907, therefore, protects as privileged only communications made to physicians and surgeons by their patients while attending them in a professional capacity and which were necessary to enable them to act in that capacity, which tend to blacken the patient's character, except

in civil cases brought by the patient for damages for personal injuries. The privilege of protecting these communications from disclosure is for the patient's benefit. The patient may waive the privilege and consent to the disclosure.

In the other recent case decided by the Supreme Court, *Skruch* vs. *Metropolitan Life Insurance Company*, 284 Pa. 299, the court held that the act of 1907 did not protect a physician from answering a question where the answer could not operate to blacken the character of his patient. At the trial the physician had been asked whether he treated the decedent for epilepsy or convulsions. The trial judge excluded the question because the physician communicated to him that the specific disease from which the insured was suffering was a loathsome one of which epilepsy and convulsions were symptoms. The Supreme Court held that this was an error, saying that the physician should have been required to answer whether the insured had had convulsions and epilepsy, although they were symptoms of some other disease.

The above discussion has purposely been limited to the law of Pennsylvania. In many other states, commencing with New York in 1828, the English common law was superseded by statutory provisions establishing a privilege for information obtained by the physician while attending the patient. Many of these statutes and the decisions under them apply the privilege very broadly. In Pennsylvania, however, the privilege is limited strictly to the cases falling within the act of 1907 as construed by the Supreme Court of that state.

The fact should be emphasized that neither in law nor in ethics is there any basis for making a distinction between private patients and ward or charity patients in the hospital. Whatever right a private patient has, the ward or charity patient possesses in an equal degree, and it is the duty of physicians and hospitals to guard the rights of the ward patients with the same fidelity and zeal that they protect the private or paying patients.

The many fine distinctions in the legal decisions, determining what information or communications are privileged and what constitutes a waiver or consent by the patient to their disclosure, need not cause any concern to the hospital official or the physician. Their concern is not how far they may go in giving out information without violating the strict letter of the law, but how far a voluntary revelation of information and secrets is, in the language of Lord Mansfield, a "breach of honor" and a "great indiscretion."

To summarize from the legal standpoint:

The insurance company's only legal right is to subpœna the official having charge of the records, the attending physicians and others having knowledge, to appear in court at the trial of the issue, and to obtain at that time the information which the trial judge determines is pertinent or relevant and not in violation of the patient's rights with respect to privileged communications to the physician.

WOMAN'S AUXILIARY

Ohio County Organized

Mrs. Robert J. Reed, Jr., of Wheeling, was elected president of the Woman's Auxiliary to the Ohio County Medical Society at the organization meeting of that body, held on the afternoon of January 27, 1930. Other officers include Mrs. R. U. Drinkard, vice-president; Mrs. D. M. Aikman, recording secretary; Mrs. William Sheppe, corresponding secretary; Mrs. Arthur K. Hoge, treasurer; and Mrs. C. H. Clovis, Mrs. W. A. Cracraft, Mrs. Harry M. Hall, and Mrs. Howard Phillips, directors.

The organization meeting was held in the auditorium of the Young Women's Christian Association in Wheeling, with forty doctors' wives in attendance. The auxiliary was definitely organized at that time and a constitution was adopted. Those in attendance are to be known as the charter members of the auxiliary. It was decided that the auxiliary will meet on the first Monday of each month.

Dr. Howard T. Phillips, president of the Ohio County Medical Society, recently appointed Mrs. Reed chairman of a committee which would meet with the purpose of organizing an auxiliary. She was assisted in making plans for the meeting by Mrs. Arthur K. Hoge and Mrs. E. S. Bippus. The principal speaker for the afternoon was Dr. Harry M. Hall, of Wheeling, retiring president of the West Virginia State Medical Association. His talk dealt primarily with the benefits derived from an auxiliary, and it will probably be reproduced in the auxiliary news next month.

At the conclusion of the program, tea was served, with Mrs. Reed, Mrs. Hoge, and Mrs. Bippus presiding as hostesses.

MONTHLY MORBIDITY REPORT

BY COUNTIES

JANUARY, 1930	Chickenpox	Diphtheria	Influenza	Measles	Meningitis, Cer. Spi.	Poliomyelitis	Scarlet Fever	Smallpox	Trachoma	Tuberculosis, All Forms	Typhoid Fever	Whooping Cough
Barbour	4	1	4	----	----	----	----	----	----	----	----	----
Berkeley	----	1	----	----	1	----	4	----	----	----	----	----
Boone	5	2	12	----	----	----	1	4	----	----	1	1
Braxton	----	2	----	----	----	----	1	----	1	----	1	12
Brooke	1	----	----	1	1	----	4	----	----	----	----	6
Cabell	----	----	----	----	----	----	----	----	----	1	----	----
Calhoun	----	----	----	----	----	----	1	----	----	----	----	----
Clay	----	1	----	----	----	----	----	----	----	----	----	----
Doddridge	----	----	10	----	----	----	1	----	----	----	1	----
Fayette	1	2	----	----	----	----	2	----	----	----	3	----
Gilmer	----	1	----	----	----	----	3	----	----	----	----	----
Greenbrier	----	1	----	----	----	1	6	----	----	----	----	----
Hampshire	----	----	----	----	----	----	3	----	----	----	1	----
Hancock	----	1	----	----	----	----	2	----	----	----	----	----
Hardy	----	----	----	----	----	----	1	----	----	----	2	----
Harrison	29	5	----	4	----	----	4	1	----	1	----	10
Kanawha	60	10	3	2	4	----	6	----	----	11	2	64
Lewis	3	1	----	3	----	----	18	----	----	----	----	----
Lincoln	----	----	----	2	----	----	----	11	----	1	1	3
Logan	6	----	----	5	1	----	15	50	----	----	4	----
McDowell	----	----	----	30	----	----	5	----	----	1	----	48
Marion	9	3	10	16	1	----	6	1	----	----	2	----
Marshall	1	----	----	----	----	----	2	----	----	----	----	----
Mason	6	1	22	----	----	----	----	1	----	----	----	----
Mercer	----	1	20	6	1	----	1	----	----	----	----	12
Mineral	48	2	9	13	----	----	16	1	----	6	1	38
Mingo	----	9	----	227	----	----	1	20	----	----	----	45
Monongalia	1	----	----	----	----	----	5	----	----	----	1	----
Monroe	----	----	----	----	----	----	1	----	----	----	----	----
Morgan	----	----	----	1	----	----	----	----	----	----	----	----
Nicholas	----	3	5	----	----	----	1	----	----	----	4	10
Ohio	9	2	----	8	----	----	6	----	----	6	----	39
Pocahontas	----	----	----	----	----	----	3	----	----	----	----	----
Preston	5	----	----	1	----	----	5	----	----	----	----	----
Putnam	----	----	2	----	----	----	5	----	----	----	----	----
Raleigh	24	5	----	3	----	1	5	----	----	----	2	----
Tucker	----	----	----	----	----	----	5	----	----	----	----	----
Tyler	----	----	4	----	----	----	----	----	----	2	----	----
Webster	----	----	2	----	----	----	1	----	----	----	----	2
Wirt	----	----	32	----	----	----	4	----	----	----	----	----
Wood	3	6	3	2	----	----	4	3	----	----	----	----
TOTALS	216	60	138	324	9	2	148	92	1	29	26	290

The West Virginia Medical Journal

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JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - Huntington

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A FEW CONCLUSIONS AFTER THE OBSERVATION AND TREATMENT OF 15,000 CASES OF SYPHILIS *

By LOUIS G. MARTIN, M.D.
Hot Springs National Park, Ark.

This is apparently a very large number of cases from which to draw my conclusions, but we have a complete record of this number of cases, including complete history, history of past treatment, and complete physical and laboratory examination. The records of these cases may be found in our U. S. Public Health Clinic, Leon N. Levi Memorial Hospital, and at our State Health Department.

Twenty per cent, or three thousand, of the fifteen thousand were neurosyphilis cases. Seven hundred thirty-five of this three thousand were selected for intraspinal therapy. We have given 2,093 intraspinal treatments to about 735. Due to the fact that many of you are connected with the railroads in one way or another, it may be interesting to say that 482 of the above cases were railway employees, of which 80 were neurosyphilis cases.

The vast majority of these 15,000 cases had been treated elsewhere—as a matter of fact, in every state in the Union—therefore we have had a very good opportunity of observing the results and after-effects of the different methods of treatment throughout the country.

After handling this number of cases one is bound to draw some conclusions, and I thought that possibly a few of my conclusions would be of interest to you, whether or not you agree with them. If you do not agree with me, it may cause you to regard your own conclusion from another angle. The most we get out of meetings of this kind is the other person's views of the subject to compare with our own. In this way our own conclusions are confirmed, modified, or rejected.

We need take very little time with the primary and secondary, or rather the acute, stages of syphilis, as you men are too well grounded to slip up on the early recognition of this type of case. However, I never miss the opportunity of calling attention to the fact that we can not recognize a syphilis sore except through repeated dark-field examination. The smallest abrasion may reveal numerous spirocheta; however, even the dark field fails in about 30% of true syphilitic sores, due to the fact that the patient has beaten you to it and used some type of medication; therefore, I regard all sores in the genital region as possible syphilitic lesions, even if the dark field is negative, and will use some local treatment and instruct the patient to report back in four to eight weeks for Wassermann test.

You can not abort syphilis, even if you see the case at the earliest possible appearance of the sore, as by the time the local lesion has shown up the spirocheta has invaded the lymph and blood stream. Then why leave the patient in doubt the rest of his

* Read before the Central Tri-State Medical Society at Huntington, West Virginia, on January 23, 1930. Published in the *International Journal of Medicine and Surgery* in January, 1930.

life, waiting for secondary manifestation or a positive blood before starting treatment in suspicious cases?

I also wish to direct your attention again to the fact that the Wassermann test is a resistance test and not a test for the actual presence or absence of the spirocheta; therefore, if a person's resistance is abnormally low to syphilis, he may have an active condition and his blood be negative. Therefore we must not let a negative blood test overshadow our clinical findings and history.

I consider a thorough history and physical examination the most important aid we have in the diagnosis of any disease, especially syphilis.

We certainly do not want to forget the likelihood of an intraurethral chancre, as I have had two cases in the last year that had been treated for an indefinite time for gonorrheal urethritis. Also we must remember that a great number of cases later on in life show a positive blood. They admit having gonorrhea, but are positive that they did not have a sore. It is conceivable that they may have had an invasion of spirocheta along with the gonococcus.

At this time, allow me to make a plea for the future health and happiness of syphilitic patients, and also for the reputation of the medical profession.

After having made a positive diagnosis of syphilis, let us be perfectly honest and frank with our patient. Take a little time in talking things over with him, and, above all, warn him that he can not be cured with five or six "shots" of neoarsphenamine (as this seems to be the general impression of a certain class of patients); but tell him he can be cured or his condition arrested if he is under observation and proper treatment at intervals for a period of three or more years, but that even after this he should report at frequent intervals for a check-up. Tell him that it may take any number of "shots" of arsphenamine as well as a great deal of mercury or bismuth or iodides; that every case is an individual case, and that the so-called course of treatment, six of this or ten of the other, will not work on all cases. Tell him, further, that he must continue treatment until he has a negative blood and a negative spinal fluid, and that he must keep them negative over a period of two or three years before he can consider himself in the arrested stage.

After making a positive diagnosis and convincing the patient that his condition is grave, even though it gives him no inconvenience or discomfort, it is left to us to map out the treatment. With the large number of detail men and the quantity of literature, this is, indeed, a problem for the man who handles only an occasional case of syphilis. I have reached a definite conclusion, after taking many histories, that the average case throughout the country is not receiving near enough treatment and that the idea of course treatment is wrong.

Each case is an individual case, and if the patient places himself in your hands he is entitled to individual consideration. One case may tolerate very little treatment; another may tolerate a great deal and the virulence of his infection may require a great deal more of all types of drugs.

My conclusions as to treatment, especially in early cases, are as follows:

Get the patient up to tolerance on three drugs—arsphenamine, mercury or bismuth, and iodides. Keep him there until his blood becomes negative or until he begins to show some of the toxic signs of one or more of your drugs. Then give him a complete rest of a few weeks and do the same thing over, except change the type of arsenic and shift him from bismuth to mercury, or the reverse; but at all times keep up your iodides.

I have reached the above conclusions, due to the fact that I believe that an organism will develop a tolerance to a drug if it is given in small doses over a long period of time. This tolerance may become so strong that you can not give enough to kill the organism without injuring your patient.

A great many Wassermann-fast cases are produced by giving too little treatment at too long intervals between each treatment over a long period of time. This brings up the question of time between each treatment.

I believe that the seven-day intervals between injections of arsphenamine, which seems to be the most general rule, are too long, for the following reasons:

All of the arsenic is eliminated in five days; therefore, you have a two-day period in which your blood stream is free of arsenic, which allows the spirocheta a rest or recuperating period. The best idea is to give it at four-day intervals, and in this way get a gradual accumulation of arsenic in the tissues and blood and keep storing it up until you get sufficient to kill off the organisms.

We are doing the same with mercury and bismuth. These drugs, however, are not so rapidly eliminated if given intramuscularly. I am giving three or four injections of three-grain doses of bismuth per week, as well as corresponding doses of mercury if I am using it.

I prefer mercury in early stages, and alternate the late cases with mercury and bismuth. We have proven to our own satisfaction that the old arsphenamine is the best drug with which to start treatment, as it will give a greater percentage of reduced or negative bloods. Neoarsphenamine is our next choice, and if these are not tolerated, silver salvarsan is used. We have proven this by running a series of parallel cases with arsphenamine, mercury and iodides; neoarsphenamine, mercury, and iodides, and silver salvarsan, mercury, and iodides.

If you return to arsphenamine—which I hope a great many of you will do—please allow me to call your attention to the fact that your rubber tubing, if new, must be boiled in sodium hydroxide and washed thoroughly. If this is neglected, you will find that you will get quite a few severe reactions at the start. Also, your sodium hydroxide must not be allowed to stand in a plain glass bottle, but must be freshly prepared at each mixture or kept in a ceresinized glass container.

I feel much safer, since the advent of sodium thiosulphate, in giving larger doses of arsenic, mercury and bismuth, due to the fact that all cases are watched closely and are impressed with the fact that if itching of the skin, soreness of the gums, cramping or looseness of the bowels begins, I should be notified at once. If any of the above symptoms occur, sodium thiosulphate, if given early enough, prevents unpleasant symptoms as a rule.

Iodides in Syphilis.—I am making a special heading in my notes of the use of iodides in the treatment of syphilis because it seems that, after the statement was broadcast that iodides did not kill the spirocheta, a great many of our profession discontinued their use or use them very indifferently. As a matter of fact, they are the one part of the treatment I find most often neglected, and if they have been used, it is my opinion that they have been used at the wrong time. My reasons for drawing the above conclusions are as follows:

On entering the body, the first thing that happens to the spirocheta is the throwing of an area of inflammatory exudate out about them (namely, the hard chancre, or, if it has invaded the lymph system, the small chain of lymph glands). This is nature's way of trying to wall off and prevent the spread of any foreign body. However, the body seems to be unable to wall off the spirocheta completely and they spread throughout the body, having a special selectivity for the lymph glands and nodes; but, as they spread, a few are caught up and remain in each area of inflammatory exudate. If they are walled off completely, they may lie dormant for years until the body is in a depleted condition; then they break out, propagate, and migrate. Our antisyphilitic drugs, such as arsphenamine, mercury, and bismuth, kill off all free spirocheta in the blood stream and lymph channels; but they do not penetrate this wall of inflammatory exudate that surrounds some of the deep-seated spirocheta. Therefore, we may get a negative blood that returns to positive in a few weeks or months or as soon as one of these areas of exudate allows the spirocheta to escape. Again the blood must manufacture antibodies and become Wassermann-positive. These areas may continually break down a few at a time; then the so-called Wassermann-fast condition occurs.

The iodides are the only drugs we have that tend to absorb inflammatory exudate; therefore, they have a great use in the treatment of syphilis if given just before and during the time you are giving antisyphilis drugs, as the iodides absorb the areas of inflammatory exudate, liberating the spirocheta so that they may be killed off by your arsenic and mercury; but why give arsphenamine and mercury to kill off all spirocheta, then stop your drug and give iodides? If you do this, you simply flood the blood and lymph system with live spirocheta and have no poison in the blood stream to kill them off, so they migrate to a new field.

I give large doses of iodides before starting arsphenamine and mercury and continue it during treatment, but stop the iodides ten days before the arsphenamine, mercury or bismuth are discontinued.

I have been able to get a negative blood on a number of apparently Wassermann-fast cases simply by loading them with intravenous sodium iodide two weeks before starting other treatment, and continued potassium iodides by mouth during treatment.

We have taken an early case and attempted to get a negative blood Wassermann. When the blood becomes negative (or shows a persistent positive after several months of treatment), then by all means a spinal puncture should be made.

Ninety to ninety-five per cent of the horrible and pitiable effects of syphilis on the nervous system can be prevented if every case of syphilis that comes into your hands is given a routine Wassermann test and a globulin and cell count on the spinal fluid after the blood has become negative or reduced and while the patient is under the influence of treatment. The time to pick up syphilis of the nervous system is before it produces symptoms.

It has been proven in the past few years that the invasion of the nervous system is not a late condition, but that if you are going to get an invasion it is in the first few weeks or months. We have proven this to our satisfaction by running a routine spinal examination on 200 cases of the earliest type of syphilis that we could find showing a four-plus blood. We found that one out of every seven showed a positive spinal fluid. Dr. Moore, of Hopkins, reports one out of five. I can report two very early cases:

In the first case, that of a bricklayer, 29 years old, the chancre was not quite healed and the blood Wassermann was four-plus. The spinal-fluid Wassermann was four-plus in all dilutions, 896 cells, and a positive globulin. This man complained of nothing more than a slight headache.

The other case proves that you can not assume that, because you have marked skin lesions, you do not have an invasion of the nervous system. In this case a man about 35 years old was admitted to the hospital with a complete transverse myelitis, and his secondary eruption, which was general and profuse, had not faded out. His spinal fluid had 94 cells, positive globulin, plus Wassermann, Graynor syphilitic transverse myelitis. ??

It is impossible to tell which of your patients are the ones to have the spine invaded, and the percentage is so high that it is unjust to your patient to allow him to take a chance. I advise waiting to make the spinal test until you have a negative or a markedly reduced blood, unless symptoms develop that indicate that it must be done at once, because I am convinced that a small percentage of positive spinal fluids will become negative after a sufficient amount of routine treatment. However, you can not depend on it. The blood may be persistently negative over a number of years and yet the spinal fluid will show a four-plus Wassermann. We see a great number of this type of case treated ten to twenty years ago, a lot of them having returned to Hot Springs yearly for mercury rubs and have shown a negative blood each year; then a few indifferent, annoying symptoms begin to develop and we find a four-plus spinal fluid. However, a great many wait too long, until a definite tabetic, spastic or paretic process has begun, and then it is almost too late. In a great many instances a doctor has not warned them against this, and they become very bitter toward the medical profession. I have been working for the past ten years in an attempt to devise a safe and sane method of treating neurosyphilis or, rather, cerebrospinal syphilis (the ones with positive spinal fluid), as there is no special form of treatment for the neurovascular patient. I have finally decided on the routine cited below for both my private and clinical work, after trying out almost all procedures reported in the literature. The 735 cases mentioned as having been selected from 3,000 cases of neurosyphilis for spinal treatment have been handled in the following manner, and I claim it almost safe and sane, as 2,093 spinal treatments were given without a single bad result:

First, the case is given sufficient routine treatment and time to see if the spinal fluid will become negative. Then a spinal test is made, and from the findings in this test, and from the patient's symptoms, particularly the reflexes, we try to determine under which of the two general classifications the case falls.

Interstitial and Parenchymatous Stages.—The interstitial stage is the irritative stage before destruction begins. In this stage there are few clinical findings —usually none, or vague at best. The patient complains only of general aching and headache up to true meningitic symptoms. Findings in the spinal fluid are slight or marked increase in pressure, increased cell count, positive globulin, and usually a positive Wassermann.

If the spinal pressure is increased, this case is selected for spinal drainage only. He is gotten up to tolerance on arsphenamine, mercury or bismuth and iodides, and once every seven days he is given 0.6 neoarsphenamine and the spine is drained at once. I do not drain my cases dry, but stop when the fluid just barely drops from a No. 19 needle. The patient lies flat on his stomach for one hour to allow the dura to close; then he is turned on his back and his head elevated slightly to increase the vacuum produced by taking fluid from the lower part of the spine. This exerts a negative pressure on the carotid artery, thus drawing the fluid over more rapidly.

This is repeated ever seven days until he has had six or eight treatments. He is given a rest and the treatment is repeated. If, however, during the course of drainage treatment, the pressure and cell count become normal but the globulin and Wassermann remain positive, the Swift-Ellis method is substituted.

In the parenchymatous or destructive stage, the process has invaded the cord or brain and, as a rule, selects some special tract such as the posterior columns of Gall and Burdock in tabies. In this stage the symptoms usually begin to appear, and if picked up early the process in a large percentage of cases can be checked before it makes an invalid of the

patient; but, as a rule, nerve tissue does not regenerate when destroyed. Therefore, it behooves us to recognize the case before it is too late. The spinal fluid at this time usually shows a normal or very slight increase pressure, low cell count, positive globulin and positive Wassermann. In this type of case we start with Swift-Ellis treatment.

I have gone back to a slight modification of the old Swift-Ellis method, after trying almost every other method, for the following reasons: I do not believe in adding a marked irritant, such as raw arsphenamine or mercury, to an already inflamed area. If such an irritant is used, a marked and severe reaction will result and, eventually, one of these reactions will leave a permanent injury. If the technique with the Swift-Ellis method is correct both in preparing the serum and giving it, there will be no reaction, as a rule, and if there is any reaction it will be mild.

I pause here to explain our method of preparing Swift-Ellis serum and why I think it works. First, the patient is gotten to tolerance on neoarsphenamine, mercury and bismuth, and iodides; then, once a week, he is given 0.6 neoarsphenamine and five minutes later 50 c.c. of blood is drawn. The blood is allowed to stand at a cool temperature until one hour before using on the following morning. At this time the clot is broken up and the solution centrifuged until the serum is perfectly clear. This serum is pipetted off and inactivated in a water bath at exactly 56° C. for exactly thirty minutes, and is allowed to cool to body temperature. Your asepsis must be perfect, as fifty-eight degrees does not sterilize the serum; it only helps to prevent a serum reaction, and will kill any live spirocheta that may be in the serum.

Why is this serum active? Due to the fact that you have an autogenous serum made from a blood that is saturated with mercury and bismuth and iodides, and a superimposed dose of neoarsphenamine that has been mixed with body fluid, including liver extracts, the arsphenamine is made more active (arsphenamine in a test tube is not strongly antispirochetic until body tissue or liver is added), as well as the antibody that the blood has formed to combat the spirocheta. Spinal fluid has very little power to form antibodies or phagocytes (proven by the fact that the increased cells are lymphocytes and not polynuclears). In my opinion, this autogenous serum has much more chance to produce good results than a very small quantity of any drug added direct to the fluid.

The patient is given six or eight of these treatments, allowed to rest eight to twelve weeks, and the same process is repeated.

If the fluid becomes negative, well and good; for, once a negative is obtained, the fluid very rarely becomes positive again. There are quite a few, however, that remain positive. In these cases, therefore, we must consider using one of the more severe and dangerous types of treatment, the two most popular of which are malaria and triparsomide. I prefer the malaria type. The patient is allowed to have eight or twelve chills (it is peculiar that the malaria seems to check the process, but has very little effect on the serology), and then repeat the intraspinal treatment, attempting to get a negative fluid while the process is inactive. The malaria parasite has no effect on the spirocheta. It is simply the elevation of body temperature to 104° or 105° that attenuates the organism. We are attempting to do this daily by hydrotherapy.

The other method of choice is triparsomide. This drug must be used with extreme care, as it does affect the optic nerve. I have in my office now a patient treated with tryparsomide one year ago who has a permanent injury to his eyes. However, after the case is selected, the eyes examined by a competent eye man before and after each treatment, there will be very little trouble, if any. The drug seems to have a special affinity for the nervous system. We are trying now spinal drainage in connection with tryparsomide.

Hydrotherapy in Syphilis.—After the fact was realized that high body temperature will attenuate the spirocheta and assist in their eradication was proven by the cessation of symptoms after the patient had been subjected to malaria or relapsing fever, certain investigators began trying to find a method that would produce the same results without the profound systemic shock produced by infecting the patient with malaria, etc. They realized that a number of Hot Springs had apparently gained a national reputation among laymen, without any known reason; so it was decided to try out hydrotherapy. Without doubt, the extremely hot baths are a great benefit in the treatment of syphilis, due to the fact that they stimulate the circulation in the blood and lymph systems, hastens the elimination through all channels, increases the activity of the skin and liver (the two organs most susceptible to the toxic effect of the treatment), and increase the body temperature daily. For these reasons one is able to give more treatment over a longer period

of time without ill effects to the patient, and at the same time toxins stored up from causes other than syphilis are eliminated.

Quite interesting results were obtained in a series of cases of early syphilis using extremely hot baths by three members of our clinical staff, namely, Drs. Wingar, Tarkington, and Jarrell.

Twenty-six cases of early syphilis, with four-plus bloods, normal heart, blood-pressure, etc., were selected. These patients were treated for six weeks. The first week, baths were given at 100 degrees; the second week at 101 degrees; the third week at 102 degrees; fourth week at 104 degrees, and the fifth and sixth weeks at 105 degrees. The temperature was not carried higher, due to the fact that diastolic blood-pressure dropped almost to zero after a bath of 104°–105° temperature for 20 minutes. These cases were given twelve injections of arsphenamine and eighteen injections of mercury and iodides. Twenty-five of these cases showed a negative blood after the sixth week.

These are very unusual results, as the percentage of negatives in this series is much higher than we usually get from ordinary baths and treatment. However, sufficient time has not elapsed to know how many will remain negative.

There is a great deal of serious experimentation in the use of hydrotherapy in syphilis being carried out throughout the country, but it is too early as yet to have definite and conclusive reports.

Blood Chemistry in Syphilis.—About two years ago the importance of blood chemistry in syphilis was called to my attention by Dr. C. M. Myers, of New York, and we have checked sufficient cases in that time to prove to our own definite satisfaction that the majority of the patients that will react to arsphenamine and other anti-syphilitic drugs can be picked up before treatment is started by doing a blood chemistry. We find that a patient that has an icterus index of above 0.6 or a blood sugar of over 100 is very likely to be a reactor. In other words, he does not tolerate arsphenamine, mercury or bismuth as well as might be expected. Therefore, we place all patients that show an increased blood sugar or icterus index on thorough eliminative treatment for a week or ten days before starting antisyphilitic treatment.

MENTAL DEFECTIVES AND STERILIZATION *

By THOMAS BESS, M.D.
Hoffman Hospital
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The past has not offered, and I fear the future will not offer, the eugenists a solution for some of their problems. Not that I do not think the subject needs immediate consideration, but the public education necessary to place their objects intelligently before the public will naturally be slow. The subject of sterilization of the socially inadequate has that class of people in our everyday work, and to the scientific investigator the question of methods to limit the propagation of the unfortunate, undesirable individual is not a matter of punishment of the human race, but I am sure that all our agitation has been out of pure sympathy for the deplorable situation that follows in the particular family where this class of people is found.

The question of sterilization for purely eugenic purposes is not as unpopular as some of the authentic reports would lead you to believe. However, the greater number of cases are confined to women. Private institutions all over the country are filled with operative cases, and it is safe to say that eighty per cent of the hospital population will be women or young girls in their 'teens. I do not think I will be greatly mistaken if I state that from twenty to thirty per cent of these women leave the hospital with the knowledge that they will never again bear children. To the physicians and surgeons who are with us today this will not seem exaggerated; but by the layman, who does not look into the subject other than through eugenic data, I may be doubted.

I am supposed to speak from the standpoint of sterilization as it applies to the mental defectives, and I am sure that it is not the idea of state lawmakers to confine their studies to one class of inadequate people, for even in prisons we have all types of cases which will fall under the different classifications of subjects we wish to consider; so, when one speaks of a moral degenerate he must necessarily mean that class legislation should not be considered. I do want, however, to emphasize the importance of state institutions being the first to grasp new ideas, put them into use, and thereby be an example for other legislative and community

* Read before the Kanawha Medical Society at Charleston, West Virginia, on January 7, 1930.

bodies. The history of all medicine demonstrates that the adoption of new methods, or so-called impossible necessities for the good of the nation as a whole, was instituted and carried out to perfection in some institution where disciplinary measures were used.

All scientific investigation must bear the criticism of the lay public; so it is our duty, as citizens of such a great commonwealth as West Virginia, to be just one step ahead of our associates—not merely as a duty, but when, to the satisfaction of individuals such as we have grouped here today, a remedy is good for West Virginia it is expected by the general populace that we be not too slow to make our adoption. The eugenic laws in West Virginia are very similar to the venereal laws on the books for use; but the state institutions are not availing themselves of their use, for no other reason than fear of public opinion.

Inasmuch as I am in private and public work I feel that I am in position to speak the opinion of the average West Virginia citizen on the subject of sterilization. In spite of the fact that we have a large Catholic population whose religious principles and teachings are not in accord with eugenic problems as I see them, I am thoroughly convinced that I have never had a Catholic patient, suffering with tuberculosis, syphilis, or other transmissible or hereditary disease, who wished to continue reproduction and suffer the possible consequences. Furthermore, I have observed that women accept the question of sterilization for therapeutic or eugenic purposes much more readily than our men patients. Furthermore, I have learned that the reason for this is that men associate the simple operation with the more radical asexualization type. During the past ten years I have talked to a large number of prisoners, and the same opinions were received; that is, the more intelligence one encounters the more enthusiastic arguments we have. Those who understand the results of the proposed treatment are heartily in favor of our laws; but we find that the ignorant, low mental types are those who object and call it "serving double time" if the question is suggested.

The types of individuals we have in our prisons and insane asylums, and who are subjects we would be pleased to attack if our laws were strenuous enough, are the tubercular, the syphilitic, gonorrheic, epileptic, and moral degenerates, such as rapists, sodomists, and the self-abuse class; chronic drug and alcoholic addicts, morons and other types of low mentality. Such types of prisoners in our local institution at Moundsville, West Virginia, will number between two and three hundred individuals.

How are we who are in sympathy with the question of sterilization going to popularize our ideas? Surely not by merely passing a law that makes it optional with the individual who has never had a scientific idea or who has no regard for society. The average man may read the history of the Mendelian theory of heredity and yet be unable to interpret the salient points of the theory. I find that if we take each individual case and ask him if, in his present status, he desires to reproduce a family which in all probability will be a likeness of the parents, either by hereditary or environmental influences, very promptly a negative answer is received. Bearing in mind that sexual relations and propagation will never be eliminated by merely telling an individual that his peculiarities can be inherited, I personally feel it a moral responsibility to speak to them in their own language.

I abhor birth-control movements in general, and have no desire to suggest ideas of this nature to those who are healthy and to whom the responsibility of a vigorous nation belongs. The state of West Virginia should justly be proud of its low percentage of illiteracy; but, on the other hand, we are just as ashamed of the fact that we have such a large number of socially inadequate people who are a public charge, and with no provision for the percentage to decrease. If the question of eugenic sterilization is worth while—and we have evidence that some of our foremost citizens have endorsed the principles by expressing themselves in the manner of making laws—I see no reason why such individuals should not be responsible for the proper function of such statute by placing all the evidence in the form of education at the door of the individual to whom the question is directed. Personally, I feel that we can teach the subject in a manner that will induce our desired classes to apply for such care that surgery offers for the proper treatment of this large number of unfortunates.

I have given the subject more consideration than I should, in my position; but I have learned one very important point of information that I am sure you will agree with: Laws pertaining to the advancement of health ideas should have the advice of doctors of medicine. I have had occasion to look over the minutes of the Iowa State Medical Society, and was unable to learn that the physicians as a body have been consulted in regard to the several laws

that have been enacted in the past. There is no individual or body of men who can influence the citizens of a community more than the family physician. Therefore, my conclusions are that in most states where health laws have been enacted, such legislation has failed to get the moral support of the physicians. The average doctor is not aware of the existence of our present statute. I can speak with a reasonable degree of certainty when I say that if the family physician was looked upon as an educator, instead of the birth-control advocate, when he could feel at liberty to discuss the problem of sterilization in his daily practice, without criticism by certain lay objections, such as religious, ordinary gossip and general public resentment toward his patient, we would not have the question of so-called class legislation to think about in our institutional care. One must remember, in giving this subject any consideration, that the number of illegal operations—that is, abortions—would be greatly reduced and no doubt offset the possible decrease of the population in general from such acts as sterilization.

At a meeting of the Conference of Charities and Correction in Boston, 1911, Dr. Charles W. Elliott, president of Harvard University, read a paper on "The Suppression of Moral Defectives," and from this paper I shall quote some of the most salient passages as they relate to this subject:

"The prevention of crime through the isolation or extirpation of criminals offers many analogies to the prevention of disease by the isolation or death of diseased persons. . . ."

"It is the purpose of this paper to urge that society should treat the victims of moral disaster just as it has now in some good measure learned to treat the victims of bodily or physical disaster. . . . In treating a slow, chronic, disabling disease like tuberculosis, insanity or syphilis, preventive medicine prescribes isolation in many cases, a general hygienic mode of life, ample precautions against communicating the disease, and no marriage unless a cure has been clearly effected. This last prescription is of great importance, for it is intended to prevent the transmission of disease or enfeeblement to another generation. Let us next compare society's treatment of moral defectives with the best treatment of physical defectives. In the first place, a large proportion of the crimes committed in our country are not treated socially at all, the criminals escaping detection and arrest or being acquitted when brought to trial through the ingenious use of legal technicalities and delays. This is as if victims of scarlet fever or smallpox should be let quite free to move about the community so far as their conditions permitted, society manifesting no active interest in their welfare and taking no precaution whatever against the spread of their disease. . . .

"Many researches into the history of criminal families have now made sure that the propensity to crime, be it moral or physical or both, is eminently transmissible, so that criminals, like imbeciles and other physical defectives, will surely breed their like if left free to do so. To leave them free is to perpetuate and multiply by inheritance the evils and losses which criminality inflicts on the race. This is as if the insane, the tuberculous and the syphilitic were left by medical practitioners and health authorities quite free to propagate their kind; this comparison suggests strongly that society needs to revise its methods. . . .

"In this revision, what improvements should be aimed at?" He goes on to number the several improvements, and declares: "The habitual criminal, who has demonstrated his quality to the public authorities, should be effectively prevented from propagating his kind. This restriction applies to men and women alike. The Indiana law on this subject and the success attained in its application have blazed the trail which all free states should follow, if they would protect themselves from moral degeneracy and from the physical evils and losses which result from criminality. The democratic governments must demonstrate that the free pursuit of happiness which they guarantee to their citizens does not include freedom to commit crimes or to propagate degeneracy."

This eminent educator places these mental defectives in the same category as those suffering from physical diseases, and believes that the treatment should be on similar lines. Likewise, Dr. Healy, director of the Juvenile Psychopathic Institute, Chicago, quotes an article by Justice Rhodes of England in a medical journal, putting the matter squarely up to the medical profession, asking what it means when out of 182,000 convictions in a year 10,000 have been convicted more than twenty times before. "On the face of it," he asks, "doesn't this seem more like a problem for those who have to do with abnormal personalities than merely for the law?"

Thomas E. Mosby, former pardon attorney for the state of Missouri, says: "The suppression of crime is not at all a legal question. It is rather a problem for physicians and economists," and in reviewing the prophylaxis of eugenics further states:

"As the only alternative remedy, then, eugenists with one accord are advocating the enactment of laws favoring the sterilization of the defective classes, and in this they are quite generally receiving the support of medical men and criminologists."

A Model Eugenical Sterilization Statute.—The lawmaker must consider eugenical sterilization in the light of the whole complex of its relationships; its legal, historical, social, economic, religious, surgical, and eugenical bearings. On the one hand, eugenical sterilization purports to prevent reproduction by certain definitely and legally described and located cacogenic persons. It claims that by so doing the race will be purged of some of its degenerate and defective stock. It is effective in so far as it is an insurance against reproduction by the individuals operated upon. It may be accomplished with little or no danger to life, depending upon the legislative provisions for executing the operation "in skillful, safe, and humane manner." In some cases the operation itself may be of some therapeutic benefit; but in most cases it is neither a mental nor a physiological benefit. While compulsory, still in most cases it is possible to secure the coöperation of the patient or of the patient's family. As a matter of fact, in most, but not all, cases of legalized operations thus far consummated, such coöperation was actually secured.

The cost to the state in maintaining in custodial institutions its antisocial citizens would probably be reduced consderably by eugenical sterilization, although the effects of such reduction would not be apparent until future decades. The science of eugenics has made sufficient progress to enable it, by pedigree studies, to demonstrate the cacogenic inheritance of certain of the more patent types of mental, physical, and temperamental degeneracy. On the other hand, eugenical sterilization (1) takes away from the individual the natural right to reproduce, and if a mistake is made in selecting an individual for sexual sterilization the error can not be rectified; and (2) subjects the individual to compulsory surgical operation with its accompanying shock. If the operation is not skillfully selected and executed, it may cause a mental or physical injury.

Eugenics is a new science and has not the great body of history and evidence to support it which medicine claims. Executive machinery for enforcing a justly enacted law has not yet been put into effect, so that we have no data upon which to base criticisms in reference to effective administration.

Thus, the lawmaker must balance evidence in favor of and against the policy of eugenical sterilization; the certain great benefit to the community, the possible benefit to the individual, the ultimate saving in money to the state; against the possible surgical shock and the possibly physiological effect upon the potential parent of the defective stock.

This model has been drafted in accordance with the experience of the administration of the existing statutes, the decisions of the courts in which the statutes have been tested, and the biological and social requirements of the case. Because of the varying eugenical needs, the different legislative customs, and the different policies in conducting the business of the state, this draft, while sound from the standpoint of constitutionality in the average state and meeting the average biological and social requirements of the situation, should be submitted to competent eugenists, psychiatrists, institutional executives, and lawyers, in the state in which it is proposed to enact a statute following the general principles here outlined. The active coöperation of all these specialists is needed in order to insure conformity to the special needs and policies of the particular state. It would, therefore, constitute a serious mistake to omit the advice of any one of them.

The Present Status of Eugenical Sterilization in the United States (by Harry H. Laughlin).—At the First International Congress of Eugenics, Mr. Bleecker Van Wagenen reported the progress which legalized eugenical sterilization had made in the United States prior to the year 1912. Since that time legislation, litigation and administrative advance have extended, and made more secure, the field of activity of this particular means of preventing reproduction by certain members of degenerate human stocks. No one, not even the most ardent advocate of sterilization, proposes to use this remedy as the sole agency for preventing parenthood on the part of human degenerates; but among advanced peoples it must be rated as one of the four or five most practicable measures for purging the human stock of its more degenerate and worthless strains.

Legislative Notes.—This paper is confined to a consideration of legalized eugenical sterilization in the several states of the American Union. In any state, therapeutic necessity is a sufficient legal authority for a surgical operation which, incidentially, may result in sexual sterility. In passing, it is worthy of further notice that in those states which have not enacted specific laws on the subject, it is possible legally for any duly licensed surgeon, with the con-

sent of the individual, or, in case of mental incompetency, of the family of the patient, to sterilize sexually an individual for eugenical purposes, being governed in each case by the laws controlling surgical operations in general. Thus, the border line between a therapeutic necessity and an eugenical desideratum, unless specifically drawn by the law, is very indefinite, so that the former easily includes the latter. But voluntary operations for purely eugenical purposes, left to the initiative of the family, are so rare in this country that they can hardly be considered to bear upon national eugenics to any great extent. It is clear that, in order to affect the future population favorably, by improving its hereditary endowments to a considerable degree, the number of eugenical sterilizations must be numbered by thousands instead of by tens.

For the purpose of making the state the arbiter in such matters, a duty which it can not avoid, fifteen of the American states have enacted statutes governing eugenical sterilization. The law is at present on the statute books, unattacked by the courts, and therefore still available for use, in ten states. Among these ten states the law is functioning in a very satisfactory manner in California, Nebraska, and Oregon. In Connecticut, North Dakota, and Wisconsin, the law is being applied without challenge in a satisfactory manner, but to a very limited extent. In Oregon and Nebraska special executive machinery of proven competency is entrusted with the enforcement of the law. In Kansas and Iowa it has fallen into disuse. In South Dakota and Washington the statute is practically a dead letter. In New York the law was declared unconstitutional by the courts in 1918 and repealed in 1920. In New Jersey, Nevada, Michigan, and Indiana, the laws were declared unconstitutional by the courts, but are still on the statute books, dead letters.

Indiana was the pioneer state to authorize by statute the eugenical sterilization of certain persons characterized by hereditary degeneracy. This law become effective March 9, 1907. Under its authority over 120 males were vasectomized in the reformatory at Jeffersonville, Indiana. But more than 500 such operations were performed in this same institution before the enactment of the law. Legislation followed in many other states. I have not time here to review this work in detail, but shall have to be content with pointing out several of the defects which experience proved the different statutes to possess, and to point out also the features of particular statutes which have proven successful, both biologically and legally, and which have, as well, been practical administrative successes.

Many states, by law, applied this remedy to the inmates of certain named institutions. In case such institutions were prisons or reformatories, and sterilization was looked upon in any manner as punitive, it is clear that the imposition by law of such punishment would, if it were not ordered as a part of the original sentence, constitute a second punishment for the same offense and would therefore be contrary to our bill of rights. In Iowa the law was declared unconstitutional on these grounds. In the state of Washington, a law which was purely punitive, and eugenical only by application, was declared by the supreme court of the state to be valid and constitutional. Such punishment was held neither cruel nor unusual, was ordered as a part of the original sentence, and was considered especially appropriate retribution for certain sexual offenses.

Motive of the Statutes.—But the greatest difficulty which the several sterilization laws have met with in the courts is not the problem of two punishments for the same offense nor constituting a bill of attainder, nor being a cruel or unusual punishment. In the latter consideration the best laws have no punitive elements about them, nor have they any special therapeutic consideration. As was previously stated, the present surgical laws permit, for medical reasons, necessary operations, regardless of whether or not they may cause sexual sterility. Due punishments are found by our present punitive system for all crimes, without calling sterilization into use. Race betterment is the only motive which eugenical sterilization laws have to justify them. The most successful statutes omit punitive or therapeutic purposes and set forth only eugenical aims. Their one purpose is to exercise the undoubted right of the state to prevent reproduction by persons of proven degenerate stock; that is, persons whose children, because of the inheritance of certain handicapping mental, physical, and moral qualities, would probably be unable to develop into self-sustaining and valuable members of society, but which children, on the other hand, would constitute a drag upon the self-supporting portion of the commonwealth.

Class Legislation.—The principal legal difficulty makes it necessary to meet the matter of so-called class legislation. Some of the courts have held that the sterilization law which is applicable to epileptics within a state institution, and not to epileptics of the same degree of degeneracy in the population at large, constitutes an undue discrimination; that is, it creates

an artificial and unnatural classification, and is therefore unjust and unconstitutional in those states in which the constitution forbids class legislation. But not all states have made this very strict interpretation. Some have held the application to institutional inmates only to be a fair primary classification and not unduly discriminating.

Persons Subject.—It is possible, however, to circumvent such possible attacks by the courts by making all persons of the same natural hereditary degeneracy of the same specific type, whether in institutions or without them, subject to the law. Indeed, so long as a person remains in a modern custodial institution, there is no great danger of parenthood. Cacogenic persons in the population at large, and also such persons in custodial institutions who are to be discharged while still potential parents, are the logical individuals to make subject to sterilization for eugenical purposes.

It is clear that if a sterilization statute is to function eugenically, it must provide for the sterilization, early in life, of individuals whose degeneracy is of an hereditary nature, which degeneracy is of such a type as to prevent the making of useful citizens out of the possible offspring. A person may be blinded by accident and still carry hereditary qualities of the most valuable nature to the state. Such a person, although personally inadequate, is not cacogenic, and should therefore not be subject to eugenical sterilization. Briefly, the persons subject, in the model law, should include all persons who, because of degenerate or defective hereditary qualities of definitely stated standards, are potential parents of socially inadequate offspring, regardless of whether such potential parents be in the population at large or inmates of custodial institutions; regardless, also, of the personality, sex, age, marital condition, race, or possessions of such persons.

Administrative Duty or Court Function.—Another legal consideration refers to the method of selecting persons who come within the eugenical sterilization law, whether it is permissible for the law, which states definite rules and standards, to delegate the selection of subjects to an administrative officer, as in the case of vaccination and quarantine, or whether the matter, which is not one demanding immediate action, but which is so tied up in fundamental values, both to the individual and the state, that court procedure for determination of the facts is essential in each case. Briefly, a review of the situation indicates that legislation is tending toward demanding court determination, or at least the privilege of a court review, in each particular case.

While the best laws are mandatory, the records show that most cases have had the consent and moral support of the family of the patient. There has, however, been a large number of compulsory and involuntary cases. Still, in the process of selecting cacogenic persons for eugenical sterilization, and in ordering and performing the operation, it is of interest to note that there have been, up to the present time, no damage suits attempted against surgeons, officers, or institutions.

Types of Operations.—The laws vary greatly in describing the types of operations authorized. For instance, the Indiana law provided "such operation for the prevention of procreation as shall be decided safest and most effective." Other states authorized "an operation for the prevention of procreation"; another demanded "asexualization." Another used the word "sterilization." Still another mentioned "vasectomy and salpingectomy." The best type of legal provision covering this point would read: "A surgical operation upon, or medical treatment of, the reproductive organs of the human male or female, in consequence of which power to procreate offspring is permanently nullified. In each case due provision shall be made for safe, skillful, and humane operation and treatment, and for securing the highest possible incidental therapeutic benefits."

Objections.—The important objections to the eugenic laws are:

1. Sterilization laws are in advance of public opinion. This probably will be generally admitted. There are, however, many persons who believe that certain types of legislation have so large an educational value that it is wise to have them precede, rather than follow, public opinion, as is the usual method of legislative procedure.

2. Sterilization laws violate the bill of rights, contained in our federal and state constitutions.

There are two decisions, already referred to, which declare punitive laws unconstitutional, as cruel and unusual punishment, as a bill of attainder, as an *ex post facto* law, and as twice subjecting a person to be put in jeopardy of life and limb for the same offense. Six states have declared eugenical sterilization laws unconstitutional as class legislation; that is, denying equal protection of the law. The reason why these statutes were denounced as class legislation was because they applied to inmates of institutions rather than to all persons of the same class in the population at large. A classification which

applies the law to all persons of the same class might be upheld.

3. No adequate legal classification sufficiently describing persons who should be subject to compulsory sterilization has yet been devised.

This is an objection which is very difficult to answer. The eugenist says that legislators may now set standards for the natural heritable qualities of legal parenthood. The psychiatrist takes serious issue with them, as we have already seen. I shall give an analysis later of the proposal made by Dr. Laughlin in his model law for the sterilization of potential parents of socially inadequate offspring.

4. Compulsory sterilization of defective degenerates will prove a menace to society, in that it will have a tendency to prevent such persons from being segregated in institutions.

A degenerate man at large, after sterilization, would be still more dangerous; and a woman, from the fact of being sterilized and incapable of bearing children, would be more prone to illicit intercourse, to adopt a life of prostitution, and to spread venereal disease. Should such persons be segregated in institutions, they would not need to be sterilized, as procreation would thereby be prevented; so why subject that group to sterilization at all?

Favorable Arguments.—The more important arguments in favor of compulsory sterilization are as follows:

1. Socially inadequate persons, including the feeble-minded, insane, criminalistic, epileptic, inebriate, diseased, blind, deaf, deformed, and dependent, are a menace to the next genration by reason of degenerate hereditary qualities. Sterilization of these will free succeeding generations of this menace to the next generation by reason of degenerate hereditary qualities.

Psychiatrists inform us, however, that science has not yet advanced so far as to be able to determine whether or not many of the qualities mentioned are hereditary, but it is in a position to say that a large proportion of these tendencies are not hereditary.

2. The protection to future generations provided by compulsory sterilization of degenerate types, which are the result of defective heredity, is a sound public policy.

This seems to be unanswerable in the case of persons afflicted with idiocy and dementia præcox, who are not effectively segregated and who, good case work demonstrates, are hereditarily defective.

3. The right and duty of self-defense applies no less to nations than to individuals. Nations therefore must defend themselves against racial degeneration from within by measures, such as sterilization, which will guarantee future generations against hereditary defect.

One answer given to this is that the number who would be reached by sterilization would be so negligible as to have no appreciable effect upon future generations; that the proportion of people who have a poor mental endowment and yet who do not carry defective germ plasm is so large that other measures for their improvement must be resorted to.

4. Regardless of the definiteness or indefiniteness of the laws of heredity, there are numbers of habitual criminals and defective delinquents who should be prevented from procreating because of the fact that they are manifestly unfit for bearing children.

Under our present social system it has not been made the duty of the state generally to rear children. This would, therefore, seem a valid argument for sterilization, were it not for possible constitutional objections. Perhaps this type of sterilization should for the present be voluntary rather than compulsory.

Dr. Harry H. Laughlin, in his book entitled "Eugenical Sterilization in the United States," proposes a model sterilization law. Perhaps one of the most difficult contingencies to provide for in framing a law on the subject is to describe just what persons should be subject to its provisions. Dr. Laughlin's law is aimed at preventing procreation by potential parents of socially inadequate offspring. This is the class, according to Dr. Laughlin, who should be sterilized; but who are the social inadequates?

Dr. Laughlin defines a socially inadequate person as one who, by his own effort, regardless of etiology or prognosis, fails chronically in comparison with normal persons to maintain himself or herself as a useful member of the organized social life of the state; provided that the term *socially inadequate* shall not be applied to any person whose individual or social ineffectiveness is due to the normally expected exigencies of youth, old age, curable injuries, or temporary physical or mental illness, in case such ineffectiveness is adequately taken care of by the particular family in which it occurs.

The socially inadequate classes, he says, regardless of etiology or prognosis, are as follows: (1) feeble-minded; (2) insane; (3) criminalistic; (4) epileptic; (5) inebriate; (6) diseased, including the tuberculous, the syphilitic, the leprous, and others with chronic, infectious, and legally segregable diseases; (7) blind, including those with seriously

impaired vision; (8) deaf, including those with seriously impaired hearing; (9) deformed, including the crippled; and (10) dependent, including orphans, ne'er-do-wells, the homeless, tramps, and paupers.

Suggestions.—In conclusion, I wish to offer the following suggestions, if the matter of sterilization of public charges is to be carried out in West Virginia:

1. Call the attention of our legislators to the bills passed, and give them more coöperation in the future for a model law—one that will be foolproof to lawyers who have the habit of sidetracking issues and catering to the type of business that is questionable.

2. Have the West Virginia State Medical Association, through its members situated in our institutions or associated closely enough to know the true status of the inadequate class, offer a sound medical opinion.

3. Endeavor to educate the families and individuals concerned in all the phases of the act.

4. Endeavor to have the governor, the board of control, the board of parole, and other state agencies coöperate with this law as long as it is on our statute books.

5. See that prisoners in state institutions who are subjects for sterilization are not allowed paroles until the constitutionality of the law is determined. There is no reason why habitual criminals, moral degenerates and other types of inadequate individuals should not be held in confinement until their full sentence has expired.

6. It should be the opinion of the officers in charge of institutions of public charge to be the first to inaugurate new systems suitable for the public as a whole.

7. Marriage of the inadequate should be prohibited.

TRAUMATIC SHOCK *

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The object of this paper is not to present anything new, but to review a subject of primary importance to those of us who are doing industrial practice.

This condition has been recognized since ancient times, but not until the comparatively modern year of 1795 was the term *shock* introduced by John Latta. Shock has been defined by the father of American surgery, the elder Gross, as "a rude unhinging of the machinery of life." DaCosta defines it as "a general depression of the vital powers arising from a traumatism."

Many theories have been advanced as to the cause of shock. Sweet and others attribute shock to failure of the adrenals to furnish sufficient adrenalin to sustain vascular tone. Henderson thinks it is due to deficiency of carbon dioxide in the blood. Boise claims it is due to cardiac spasm followed by exhaustion. Meltzer thinks it is inhibition of the bodily functions in general. Some think it is caused by fat emboli, while the acidosis theory has many followers.

Two main theories are advocated today: the *vasomotor* theory, by Keen and Mitchell years ago, and more recently by Crile and others, and the *traumatic toxemia* theory, by Cannon and others.

Those who advocate the vasomotor theory claim that, by overstimulation of the sensory nerves, impressions are conveyed to the nerve centers, the vasomotor center is exhausted or inhibited, vasoconstrictor power is lost, the peripheral arterioles and capillaries are palsied and are depleted or nearly emptied of blood, and the blood is largely transferred to the somatic veins and especially those of the splanchnic area. Crile more recently claims that man is an electrochemical mechanism and that exhaustion results from the difference in potential between the poles of the organism. More recently MacLeod describes it as a condition wherein there is more or less paralysis of the sensory and motor reflex arc. Recent experimental work by Smith points to a depression with possible exhaustion of the peripheral vasomotor system rather than the vasomotor center.

Those who advocate the traumatic toxemia theory claim that the vasomotor mechanism is not primarily exhausted, but that the condition is produced by the liberation of broken-down proteins from the damaged tissues. Some think it is histamine; others think it is a peptone that increases the permeability of the capillary walls, resulting in a decreased blood volume. To this condition of the circulatory apparatus Cannon suggests the term *exæmia*, and he further suggests that the other conditions are secondary to the low blood-pressure and to the lessened volume of blood supplying the brain.

Whatever the cause, most men agree that shock is probably produced by more than one factor; that it may, but seldom does, come on immediately after an injury, and that certain conditions, such as fear, pain, hunger, exposure to cold, hemorrhage, injuries to the genital organs, crushing injuries to the long

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bones, and chronic diseases, such as diabetes and renal disease, predispose to the condition, and that rough and prolonged transportation aggravates it.

Signs and Symptoms.—The patient lies quietly; may or may not move at all. The face is expressionless and exhibits neither pain nor anxiety; the skin is cold, of an ashy whiteness, often clammy and perspiring freely; he is usually conscious, answers questions when spoken to, but does not volunteer any information. The voice is low and harsh and sounds far away; the expired breath is cold; he does not complain of pain; the eyes are sunken and fixed on some distant object, the pupils react sluggishly to light; the lobes of the ears, the nails, and the tips of the fingers and toes are bluish; the mucous membrane is blanched; the respirations are shallow, frequent, feeble, and may be gasping. The heart action is weak; the pulse at first may be slow, but rapidly becomes irregular, small, weak, rapid, and compressible. The reflexes are diminished in activity; the muscles show great weakness and relaxation; the sphincters are relaxed, and the blood-pressure is greatly lowered.

Diagnosis.—The diagnosis is most difficult from internal hemorrhage. In hemorrhage there is great restlessness, extreme thirst, frequent yawning, nausea and sometimes vomiting. The two may be associated, which makes the problem still more difficult.

Preventive Treatment.—Since most of us are interested in this industrial field, the prevention will be discussed primarily from this standpoint, leaving surgical shock to be discussed by our surgical friends. I believe that many cases of shock will be prevented by the establishment of the following program:

1. A careful and thorough physical examination of all employees.
2. Establishment of fully equipped and properly coached first-aid teams.
3. The establishment of first-aid or shock stations by all industrial concerns.
4. Holding the patient at the scene of the accident until all danger of shock has passed.
5. Education of the public to the advantages of these and to the dangers of rough and prolonged transportation of an injured patient.

Actual Treatment.—If there is hemorrhage, it must be controlled, if possible. The tourniquet is a good temporary measure if properly used, but dangerous if not properly used. Preferably, all bleeders should be ligated gently and with as small amount of tissue included as possible. If there is internal hemorrhage, the patient has to be operated on and should be taken to the nearest hospital as soon as possible. If there is no hemorrhage, or if it has been controlled, the head of the patent should be lowered. He should be wrapped in hot blankets and hot-water bottles packed around him. In severe cases the legs should be bandaged to the hips and the arms to the shoulders.

Fractures should be immobilized; those of the long bones preferably in a Thomas splint or some other means of traction. Compound fractures should be given good drainage. In cases where there is badly lacerated or contused tissue, a debridement should be done under local anesthesia. Most men agree that, where there are badly crushed and mutilated limbs, a rapid emergency amputation should be done, preferably under local anesthesia if possible; if not, under general anesthesia, as the harm done is more than compensated for by the elimination of the toxin-producing, broken-down tissue.

Morphine should be used freely. Atrophine is valuable. Strychnine is harmful and should not be used. Hot coffee by mouth and by bowel is of service if we are sure there is no perforated abdominal organ. Camphorated oil hypodermatically is often of benefit. Adrenalin intramuscularly, with massage to prolong its effect, is of value in raising the blood-pressure, or, as advised by Crile, a solution of 1–50,000 in saline solution, given slowly into a vein or, in severe cases, into the arterial system, directed toward the heart, or 1 c.c. or more directly into the heart muscle in case of collapse, accompanied by artificial respiration. Pituitrin in 15–30 m. doses intramuscularly or in salt solution intravenously is also of value in raising the blood-pressure.

A primary need is to increase the volume of circulating blood. This may be done subcutaneously, by proctoclysis, intravenously, or, if necessary, by all methods. Subcutaneously, those chiefly of value are normal saline and 5% glucose. By proctoclysis many solutions have been used, notably normal saline, 5% glucose and 2–5% sodium bicarbonate, or combinations of these.

Intravenously, we have many solutions advised within the past few years which do not require any complicated apparatus to be given—simply a 1,000 c.c. bottle, some rubber tubing, a needle, and gravity will do the rest. Saline, either isotonic or hypertonic, is used by many. DaCosta advises normal saline with 6% gum acacia. Glucose is used from 5% to 20%. Fisher recently advises 15% glucose with insulin (1 unit to 3 gm. of glucose), given slowly, which, he claims, hastens the oxidation of the carbo-

hydrates for nourishment of the cells. Padgett and Orr now claim that 15% glucose should be used without insulin, as the latter has proven of no benefit and is dangerous. I have used glucose with and without insulin, and in several hundred cases have seen no ill effects from it; but I believe that glucose alone does as much good and should be used alone. Blood transfusion is very valuable in shock, especially where there has been hemorrhage, since I believe that only the direct method should be used, which is by necessity a hospital and laboratory problem; I shall leave it to them for discussion. The secret of any solution given intravenously in shock is the time taken to give it, as it must be given slowly to get the desired results.

Finally, if we can remember that the treatment consists chiefly in eliminating the known causes, supporting the circulation, administering a good nerve sedative and a prayer for those of us who would load an injured patient in the back of a car with instructions to hurry to a hospital fifty miles away, shock will not take such a heavy toll of life in our industrial field in the future as it has in the past.

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COMPRESSION THERAPY IN THE TREATMENT OF PULMONARY TUBERCULOSIS *

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The treatment of tuberculosis, particularly the pulmonary type, has always been a stumbling block to the medical profession. Since Koch's discovery of the tubercle bacillus in 1882, a huge amount of time and money has been spent in attempting to obtain specific medication for this disease. So far, science has not discovered a specific remedy. As the result of tireless experimentation and study, one principle of treatment has been generally accepted—that we can combat this dread disease to best advantage by lending all possible assistance to nature in its efforts to accomplish a cure. We can be of greatest assistance to nature by providing for our patients an abundance of sunlight and fresh air, together with physiological rest for the affected part.

In this paper we shall deal with a procedure which will cure approximately 33% and improve an additional 26% of properly selected cases of pulmonary tuberculosis. Such a form of therapy certainly merits serious consideration when one is treating many cases of this disease. There are approximately 100,000 cases of pulmonary tuberculosis in the United States. About three per cent are suitable subjects for surgical treatment of a type more radical than artificial pneumothorax. The cases I refer to are, for the most part, the advanced unilateral types of pulmonary tuberculosis.

When a review of the literature is made in an attempt to familiarize oneself with the numerous methods that have been tried in an effort to immobilize or put at rest the diseased lung, one finds that all of the many procedures have given beneficial results in varying degree. Gerald Webb, at Colorado Springs, reports some good results from posture; that is, keeping the patient strictly confined to bed and resting on the affected side. This procedure inhibits respiratory movement of that side. One can readily see that this is ineffective, because the lung is encased in a bony cage and can not be put at complete rest in this manner. Some have tried strapping the affected side of the chest. Others have attempted to immobilize the chest by the use of sandbags, etc. All have yielded disappointing results.

The most efficient method is that devised by nature itself. I have reference to spontaneous pneumothorax and pleurisy with effusion. When one sees these phenomena it usually means early involvement, the former being brought about by early rupture of an alveolus or small bronchiole into the pleural cavity. This method of nature is oftentimes capable of putting the lung at rest for a sufficient length of time to allow healing of the lesion. In the chronic cases with cavity formation and pleural adhesions, nature's method is changed to the production of fibrous tissue and calcifications. The contracture of the fibrous tissue draws the mediastinum and its contents laterally, the diaphragm upward, and the ribs toward the median line into

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a more oblique and closer formation, thereby reducing the volume of the thorax on the affected side. In chronic fibroid cases one often sees the trachea and heart shadow drawn to the right or left of the midline, as the case may be. It is my purpose to point out, in a brief way, the efficiency of a procedure, applicable to a relatively small, properly selected group of cases, which will mechanically assist nature in decreasing the volume of the thorax on the affected side. Thereby the infected lung is permanently immobilized. This is the first and foremost indication in the treatment of pulmonary tuberculosis. I refer to extrapleural thoracoplasty.

Within the past few years, Sauerbruch of Zürich has reported over 500 operative cases. In this country there were only 110 cases reported prior to 1924. The first man in America to perform an extrapleural compression of the lung was Archibald of Montreal, in 1912. For over twenty years surgical compression therapy has been developed and extensively used in Switzerland, Germany, Scandinavia, and Denmark. The surgeons of the other countries on the continent and America are now beginning to appreciate its value and to make use of it. When one thinks of the progressive nature of surgery in the United States, it is really appalling that the surgeons of our country have been so slow to adopt such a valuable procedure. The leading exponents of compression therapy in pulmonary tuberculosis in America today are Archibald of Montreal, Sherris of Colorado Springs, Lillienthal of New York, Welles of Saranac Lake, and Alexander of the University of Michigan.

While bed rest is good, it is not able to put the lung at complete rest nor to protect it against the violent movements of coughing. Compression therapy does this and thereby largely checks the movement of toxin-laden lymph into the general circulation and of bacilli-laden sputum to new situations in the lungs. It also empties the lungs of accumulated products of degeneration and prevents the spread of infection throughout the bronchial tree by collapsing the bronchi and alveoli. Most important of all is the fact that it is directly responsible for a rapid new growth of fibrous tissue which encapsulates the lesion and isolates the disease.

So much for the physical principles of compression therapy. Now let us consider the indications and contraindications for its use. First, there must be active coöperation between the internist and surgeon in the selection of cases to avoid great disappointments. In short, surgical compression therapy is indicated largely for unilateral lesions only after all other forms of treatment have failed, including prolonged sanitarium care or properly managed home treatment and a fair trial of artificial pneumothorax. In the past only the extreme cases came to the surgeon and his services were considered the last resort. Since the procedure has proven so efficient in this selected group of cases, we may now confidently expect a larger number of patients to reach the surgeon at a more opportune time. The surgeon and the internist should follow the case jointly. A conclusion should be reached as to whether or not compression therapy will be a benefit before the patient becomes moribund. It is remarkable that surgical intervention has been able to accomplish so much in the past. It is surprising how well tuberculous patients wit hhigh fever, much sputum and large cavities will tolerate the operation.

We may say that usually the operation should be confined to patients between fifteen and forty-five years of age. Apparent age and the condition of the cardiovascular system are more important than the actual number of years. Sauerbruch does not hesitate to use surgical compression therapy in persons under fifteen and over fifty, if the conditions are satisfactory and the indications proper.

The question now arises as to how much lung involvement there should be before compression therapy is considered. Very extensive disease of all the lobes of one lung is no contraindication, provided, of course, that the patient's general condition is satisfactory. Most of the reported cases had cavitation, and it is among these cases that the most startling results have been obtained. Compression therapy is especially indicated where basal lesions are well marked, since spontaneous healing is rare in this location because of the marked respiratory movement which is present. Operation on the left lung is theoretically more favorable than that on the right, because the heart assists in filling the cavity. The type of pulmonary pathology is of great prognostic value. The chronic fibrous variety is much more favorable for compression therapy than the rapid caseating type. In a measure, these points can be determined by the duration of the disease, the physical signs, and the x-ray findings.

An accurate selection of cases is oftentimes extremely difficult because of the difficulty in estimating the presence or absence of an active lesion in the so-called good lung. If there is activity in the better lung, naturally the increased amount of work that it is required to do tends toward the more rapid progression of the disease in the so-called good lung

However, one must consider that, by diminishing the absorption of toxins by collapse of the poor lung, the resistance of the patient may be raised sufficiently to overcome activity which may be present in the other lung.

Let us now consider, briefly, the contraindications. First of all, I mention advanced disease in both lungs. However, oftentimes a single step may be of advantage when one lung is apparently more active than the other. I have in mind paralyzing the diaphragm on the worst side. This often is sufficient to control hemoptysis, reduce the amount of cough and sputum to such a degree that spontaneous healing progresses more rapidly.

Active tuberculosis elsewhere is a contraindication. I mean, by that, tuberculosis in the skeletal system, intestines, genitourinary tract, and throat. However, it has been noted that mild laryngeal tuberculosis is often improved when the offending lung is put at rest.

At this point let us consider briefly the management of a patient with unilateral pulmonary tuberculosis. First of all, the patient should be given the benefit of well-regulated sanatorium or home care. If there is no improvement after a period of six months or a year, artificial pneumothorax is to be considered. If, after repeated collapse by artificial pneumothorax, there is no improvement, due to the insufficient rest obtained by this method, or if artificial pneumothorax can not be carried out satisfactorily on account of adhesions, surgical compression therapy is to be strongly considered. The patient's economic situation is another factor; for example, a man with a large family is certainly needed at home, and any method which will hasten his convalescence and return his earning power at the earliest possible date is justifiable.

A few words about the operation are in order. After much experimental work by the leading advocates of this form of therapy, in an effort to determine what type of operation gives the most compression with the least amount of operative shock, it is quite generally conceded that a modification of the Brauer-Friedrich extensive resection is of the greatest value. The particular operation which I favor is the Sauerbruch extrapleural paravertebral thoracoplasty. As a preliminary step, five to eight days before resection the diaphragm on the affected side is paralyzed by evulsion of the phrenic nerve. This is followed by resection of the first to the tenth rib, a total of about 135 cm. in length being removed. It is usually advisable to perform this operation in two stages. The first stage consists of the resection of portions of the sixth to tenth ribs, inclusive. The second stage, consisting of the resection of the upper five ribs, follows in about ten days. Gas-oxygen or paravertebral anesthesia may be employed. The chief technical difficulty lies in removal of the first, because of its position behind the scapula and the close proximity of the brachial plexus. Sauerbruch's average resections are as follows:

Ribs: 1–3, three cm.; 2–5, twelve to fifteen cm.; 9–11, six to twelve cm.

This is a sum total of about 110 cm. I believe, however, that a sum total of 135 cm. produces better results.

Following such a procedure one would naturally expect considerable shock, but it is really surprising how well these patients withstand such a major procedure. As a rule, there is considerable pain in the chest, shoulder and arm for the first few days, especially after removal of the upper five ribs. A tight dressing and a narcotic in suitable dosage usually alleviate this pain. One may expect some dyspnea for about a week, which may be caused by the toxemia. The pain is probably due to the mechanical readjustment of the thorax.

As to the amount of deformity following the early operations, particularly the Brauer-Friedrich operation, deformity and functional disability were considerable. After the modern operation, deformity is practically negligible; certainly none that can be detected through the clothes. The narrowing of the chest occurs chiefly in the horizontal diameter. At times there is a little drooping of the scapula and patients will often complain of a clicking of the scapula against the rib stumps. A compression pad should be worn for some time to get the benefit of all the compression and to steady the thorax until the rib ends have united.

A few words about the results. In a series of 1,024 collected cases reported from various clinics, 32% were cured; 26% improved, and 35% succumbed. Seven per cent of the cases were not followed up. If one carefully selects the cases, better results than the above can be obtained. In a series of cases selected from the reports of fourteen surgeons who are very careful in their selection, 824 cases showed 25% complete cure; 14% clinically cured, or a total cure in 33%. Four per cent of the cases were made worse; there were early deaths in 12% and late deaths in 17%. The immediate operative mortality in well-selected cases is about

two per cent. Practically all the cases in the above series were desperate cases with extensive disease, almost all having cavities and many with bilateral infection, worse on one side.

That these desperately diseased patients could be saved from imminent death is surprising; that 32% were cured is almost miraculous, and that an additional 26% were given a new lease on life is most gratifying. For such cases as yet there is nothing to compare with compression therapy, and I believe it deserves the aggressive support of every physician and surgeon who sees and treats these unfortunate people.

ECLAMPSIA *

By KNIGHT REYNOLDS, M.D.
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It is not my intention to read a paper this evening, but merely to talk about eclampsia in general, dealing more especially with its symptomatology, treatment, and prophylaxis.

Eclampsia is a disease of pregnancy occurring usually in the latter third and characterized clinically by coma, convulsions, a rise in blood-pressure, and albuminuria.

The etiology of this disease is unknown. Many theories have been advanced as to its cause, but no definite conclusion has been arrived at. At autopsy the most characteristic lesions are found in the liver, kidneys, and brain; but at times no pathological changes are noted.

This toxemia occurs about once in every six hundred pregnancies and is about three times as common in primiparæ as in multiparæ. The most common symptoms are those of headache, nervousness, roaring in the ears, spots in front of the eyes, failing vision, nausea, vomiting, cramps in the legs, and edema varying from a localization in the lower extremities to complete edema of the body, including the eyelids. These symptoms may increase in severity until the patient develops a coma, which may be followed by convulsions.

The eclamptic convulsion presents one of the most horrible pictures encountered in the practice of medicine. Just before the fit, the patient is very restless, the eyes and head are turned to one side, the mouth is opened, and the body becomes rigid. The pupils dilate, the eyes oscillate, the lids open and close; the muscles of the face, the arms, legs, and finally the whole body, begin to twitch. At this time the jaw is opened and closed, and the tongue receives considerable punishment. There is at first a tonic and then a clonic spasm of all the muscles of the body.

At the height of the convulsion, the respiratory muscles are paralyzed; the patient becomes very cyanotic, and frequently does not breathe for several minutes. The frequency of the convulsion is fairly constant, occurring at intervals usually within an hour, although shorter or longer periods may elapse. The blood-pressure reaches its height during the convulsion and ranges between 130 and 300. The pulse is rapid, full, and bounding, and there is a gradual rise in temperature, ranging around 103°, but it frequently goes higher as the end nears.

The urine, which is decreased in amount, is concentrated and contains varying degrees of albumin. Albumin, however, is always present. The microscopic examination of the urine may show nothing of special interest, but frequently shows red and white cells with granular and hyaline casts. There is a leucocytosis which increases with the severity of the disease and with the invasion of pathogenic microörganisms.

In the treatment of eclampsia, the pendulum has swung from one extreme to the other. In the years gone by, the primary aim was to deliver the patient as quickly as possible. This frequently was done by the so-called accouchement force or the manual dilatation of the cervix. This method of delivery was often followed by great shock, with a high maternal and fœtal mortality. In the more recent years, there has been a gradual trend to conservatism, treating the patient as a medical case and disregarding the pregnancy. Following this method of treatment there has been a decided decrease in the maternal mortality.

It is needless to say that this type of case should be moved to a well-equipped hospital; here, she can be constantly under observation, and emergencies can be met as they arise. Each case presents its individual problems, and the best method of treatment can be determined only after the case has been carefully studied.

The points to be considered are, first, the period of pregnancy; second, the condition of the cervix; third, the skill of the operator; fourth, certain complications of pregnancy, such as placenta prævia, contracted pelvis, etc.

The conservative method of treatment is begun by the administratino of drugs with the idea of con-

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trolling the convulsions and keeping the patient quiet. The two drugs of choice are morphine, hypodermatically, and chloral per rectum. A venous section is usually the next step in this treatment; this, however, depends upon the blood-pressure and upon the condition of the patient. If the pulse is good and the blood-pressure fairly high, a generous phlebotomy of from 500 to 1,000 c.c. of blood may be taken from the arm. During this procedure the blood-pressure should be taken constantly, and when it falls to 100 the blood-letting should be stopped. Gastric lavage and colonic irrigation are also followed under this treatment.

The radical treatment includes some method of rapid delivery, either by the abdominal route or by the birth canal. If there is some disproportion between the size of the fœtus and the bony structure, or a placenta prævia or other complication, the method of delivery is by the abdominal route. If labor is so far advanced that the cervix is fully dilated and the head engaged, delivery can be completed by forceps. If the head is not engaged, a version and breech extraction is the method of choice.

The anesthetic used in the radical treatment is very important, the choice being nitrous oxide gas. The most frequent complication is pulmonary edema, and this must be constantly borne in mind when a general anesthetic is given.

Several weeks ago I had a patient admitted to the Memorial Hospital, Cumberland, Md., having eclamptic convulsions. Little history could be obtained. She had received no prenatal care. Early in the morning on the day of admission she was found unconscious and having convulsions. It was not until late in the afternoon that she was admitted to the hospital; by this time she had had at least eight eclamptic convulsions.

Examination showed a white girl, sixteen years of age, primipara, unconscious and having convulsions every forty minutes. Her tongue was markedly swollen and protruding from her mouth, having received considerable injury from the teeth during the convulsions. Blood-pressure was 140/100. Abdominal examination revealed a pregnancy at term, vertex presentation, back to the left, head floating. Rectal examination revealed a hard cervix, not dilated or dilatable. Pulse was rapid, full, and bounding. Temperature was 100°. Urine examination showed 40 mgm. of albumin per 100 c.c. and many granular and hyaline casts. Patient's general physical condition was good.

Because of the patient's general physical condition and the condition of the cervix with the head floating, I decided to deliver the patient by the abdominal route. This was done under gas anesthesia, with very little shock. Patient's condition following operation was good. About five hours later the blood-pressure went up to 150/100, which was followed by a convulsion. The convulsions continued throughout the night and early morning, and the blood-pressure continued to rise until it reached 175/100. A phlebotomy was done with the withdrawal of 700 c.c. of blood, and the blood was replaced by a 5% solution of glucose. A few hours later, 10 c.c. of a 20% solution of magnesium sulphate was given intravenously. High colonic irrigation and gastric lavage were given, about two ounces of a saturated solution of magnesium sulphate being left in the stomach. As soon as this started to act the convulsions ceased, and the patient rapidly improved. She was unconscious for five days and had a total of twenty-five convulsions. Her course in the hospital after the fifth day was uneventful.

The most important thing in the prevention of eclampsia is the prenatal care. A pregnant woman should be seen every month for the first six months of her pregnancy; every two weeks during the next two months, and every week from then until the time she goes into labor. At this time the blood-pressure should be taken and a careful urinalysis made. Any rise in blood-pressure above 130 should be considered a danger signal, and the patient should be placed on a rigid diet. At first the proteins should be eliminated, and free purgation with magnesium sulphate used. If the patient does not respond to treatment, she should be put to bed on a milk-and-water diet, with free purgation. If the blood-pressure continues to rise, the pregnancy should be terminated.

The method of termination depends upon several factors. If the patient is a primipara and the pregnancy sufficiently advanced so that the child is viable, the method of choice is by the abdominal route. If the patient is a multipara and there is no disproportion between the size of the fœtus and pelvis, or if no other complications are present, frequently the labor can be started by the mere rupturing of the membranes.

I wish to emphasize again the importance of prenatal care. Every pregnant woman should be considered a candidate for eclampsia, and her pregnancy should be watched with this complication in view.

DELAYED LABOR *

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The general practitioner is called upon every day to answer many and varied questions and to help decide as many issues. It is a pleasure to give affirmative, final answers to a great many of these questions, whether they come from the laity or from our professional colleagues. There are many issues around which are handicaps of varied and sundry kinds, both in general and special practice, and it is among some of these beclouded ideas that we aimlessly wander, hoping how soon some one will skillfully and practically work out a solution simplifying the rather perplexed state of knowledge as regards some of our present-day problems, particularly in the field of obstetrics.

Is it possible for the profession to be as positive as to post-maturity as it is as to prematurity or maturity? Why the uncertain "My wife is overtime, Doctor, and I believe you had better do something or see about her"? Who has not heard these words, and, in our earlier years of practice, heard them with fear and trembling? Delayed labor or post-maturity, since to my mind the terms are interchangeable, has long been a favorite topic of discussion among both the laity and the profession, and it bids fair to be as popular for some time yet to come. Has medicine approached this problem from the proper angle, and is it now seeking the correct solution with just the right perspective?

"There is no such thing as a post-mature child." Who has not heard these words uttered alike by the great and the near-great? Headway will be made when a workable scientific solution has been found for the terms *prematurity*, *maturity*, and *post-maturity*, as I see it.

Starting with the most analogous comparison to the human to get better to th eobjective of our paper we will take for an example the cow. In Reid's experiments the gestation period varied from 260 to 294 days, a mean average of 277 days or a six per cent variation from a single act of coitus. Another series showed a gestation period of 252 to 320 days, or a twelve per cent variation from a single act of coitus. However, a fully developed calf may be delivered any time from 241 to 321 days after the cow is covered (Ahlfeld, Schwartz). In mares, a variation of 311 to 394 days, or twelve per cent variation from a single act of coitus, has been shown. Upon such data we are to assume that the same conditions will more or less certainly hold true for the human.

Ten lunar months has been the customary figure for estimating the period of gestation; but circumstances, to some possible extent, may influence it otherwise. Ovulation may occur at any time. There is a great deal of variance as to the length of time that the spermatozoa remain alive after insemination. Most writers say three to seven days; but Duhrssen says they may remain alive for twenty-three days. This uncertainty has been, is now, and will continue to be a very sound basis for lawsuits and fat fees from plaintiff or defendant, as regards the basis for parentage.

Fortunately or unfortunately, no English-speaking country on the globe today has laws regarding the actual length of the gestation period. The old Scotch law names 168 days at the earliest time a child may be born alive. In Austria the law recognizes the legitimacy of the child born 240 days after marriage or 307 days after the death of the husband. France recognizes the legitimacy of the child if it is born 180 days after marriage. If born 300 days after dissolution, the legitimacy may be contested. However, civil and medical authorities are at variance on this point. The Swiss civil code says: (1) The child born during the marriage, or in 300 days after the dissolution of the marriage, has the husband for a father. (2) The child born after 300 days is not presumed to be legitimate. The German law recognizes the legitimacy of the child 181 days after marriage and 321 days after the death of the husband.

McCaffrey[1] cites a long list of cases where the judges, juries and the medical profession are at very great variance as regards the length of the gestation period. Under these circumstances it will continue to be the best policy to state facts only, and not opinions, when called to court. Bessinger reports a gestation of 336 days, while a fairly authentic case is recorded in England where a son was born July 7, 1781, and lived to maturity, and a daughter was born January 5, 1782, or 182 days after her brother, and lived to marry. Such facts ought to plac eus on guard lest we positively state the gestation period for a viable child to be six and a half months. Then there is Fothergill, who reports a césarean section 344 days after the last coitus. In the above reported cases you might say we have the

* Read before the Fayette County Medical Society at Oak Hill, West Virginia, on March 12, 1929

long and the short of the whole argument or the inside and outside limits on record.

The accepted rule among most of our leading obstetricians is that the fœtus must measure from 48 to 53 cm. in length, weigh from 5 to 9 pounds, and measure from 8.5 to 10 cm. in the biparietal and from 10 to 12 cm. in the occipito-frontal diameters of the head.[2] Should it exceed these measurements, most likely delayed labor or prolonged labor will ensue, and the fœtus may be called post-mature. Right here let me say that there is a vast amount of conjecture as to exactly what is a workable definition for the word *maturity*. At just what point have we counted right, and, again, at just what point or points have we discounted and said that, in a given case, the woman is having or will have a post-mature fœtus?

Reviewing some of the vast amount of data as to the supposed causes of delayed labor or post-mature babies, we were almost unable to find a starting point. Not a great deal of stress should be laid on heredity, nationality, environment, age, intermenstrual interval, or the size of the child, etc. Day states that, the longer the intermenstrual interval the longer the gestation period and the shorter the interval the opposite. Von Winckel gives as his opinion that only 74.8% of the babies that exceed the above measurements should fall in the category of post-mature babies. Glaister[3] says that "the best evidence of maturity is the presence of an ossific center of 5 mm. in diameter in the lower femoral epiphysis, and of another in the cuboid bone of the tarsus." However, Browne found that the center in 100 fœtuses, believed to be mature, varied within wide limits and in 17 cases the ossific nucleus was entirel yabsent. Ballantyne[6] concludes, in a very exhaustive study, that it is impossible to tell within one month the age of the child by ossification centers alone. Nicholson[4] says that practically all of the reported cases of delayed or prolonged labor or post-maturity, if you please, so frequently show a lack of good evidence to substantiate the diagnosis. We do not know what causes labor to start, consequently what criterion should we adopt as to the possibility of a given case being one of prolonged labor? Von Winckel thought that the male sex was more likely to produce delayed labor or post-maturity. DeLee[5] says that young women are more likely to have a shorter gestation period and older women a proportionately longer period, and that women who have been sterile for years, or old primiparæ, are likely to go over term; also those who had delayed puberty, dysmenorrhea, and who have long, hard, rigid cervices, are likely to have prolonged labor. The more active women in the last months of pregnancy are far less likely to have delayed labor than the lazy ones or those who do not exercise or work. Women, as a rule, he thinks, are more likely to give birth earlier in the summer months than in the winter months. It is his belief that heredity is a factor with which to be reckoned. Hannes found that in 50% of all children weighing more than 8¾ pounds the pregnancy had lasted more than the usual 280 days. Laurie reports that 1,500 women who had been in the hospital from one to three months, in comfortable circumstances, went twenty days longer than the control women under all kinds of circumstances. The absence of the head from the lower uterine segment has been held as a cause of delayed labor.

A woman with a thirty-day type menstruation is held by some men to be a frequent cause of post-mature babies. Some hold that the fœtal pituitary gland may play a part in inciting uterine contractions. In support of this, the relative frequency of anencephalic abnormality in the absent head from the lower uterine segment, in which case the baby's pituitary gland is usually absent. Post-mortem signs are not positive proof of post-maturity. Again, the size of the fœtus and degree of bone ossification are held to be reasonably certain criteria of post-maturity, although it must not be forgotten that the x-ray can not be depended upon to establish age within one month. A marked acceleration of intra-uterine development is possible, causing one fœtus at eight months to be as fully developed as another at nine months, and so on. Is it not possible to have a post-menstrual conception by a pre-menstrual spermatozoon? This would, in a measure, explain some of the miscounts, would it not?

Many writers have considered that a very definite relationship exists between the generative endocrine system cycle and pregnancy duration with a definite parturition date in any given case. It does not seem preposterous to assume, in the light of a vast amount of accumulated data, that the length of the generative endocrine cycle has tended to increase in the human race, and that, in consequence of this, the increased age and size of the fœtus lead, in many cases, to maternal intolerance and uterine evacuation before the endocrine clock is ready to strike. This seems one of nature's disharmonies. Jolly[7] holds that the involution of the corpus luteum in the latter stages of pregnancy and the final cessation of its

activity with consequent uterine changes lead to parturition. Is it not possible for these changes to be delayed, considering our meager present-day knowledge of the vast, intricate functions of this system? It has been stated that, in the long cycle cases, birth is most likely to take place when the tenth missed period following conception falls due, or shortly thereafter.

Another writer[7] figures that to take the eleventh period after conception as the epoch of uncomplicated physiological parturition, counting from the middle day of the last flow in short cycle cases, that is, the 24-day type of menstruation. Should the date of coitus be known and gestation reckoned therefrom, our storehouse of knowledge has not very materially been enhanced, as we yet have the conception-delivery interval to ruminate upon.

The laity, as well as a great many otherwise well-informed and cultured physicians, believe delayed labor or prolonged labor to be a very common occurrence, which idea is mostly inherited from obsolete antiquity. However, there is as yet no scientific, workable, every-day rule as to figuring the exact gestation period in any given case. Von Winckle, reporting 30,000 pregnancies in which the first day of the last period was positively known, and from which the pregnancies were calculated, found 31 cases showing a duration of from 302 to 322 days.

Ahlfeld, quoted by Williams, gives 269.91 days as the average duration of gestation after coitus, with cases varying from 231 to 329 days. Eden and Holland give 273 days as the average period of gestation after coitus, and further that fifty per cent of all births occurs from the 274th to the 280th day after cessation of the last menstruation, and most of the remaining go into labor between the 260th and 274th day, or between the 280th and 294th day; but that six to eight per cent of all cases, or one in every fourteen, go over 300 days, or, in other words, are post-mature. Obtaining the actual date of insemination, we may very reasonably figure 275 days as the period of gestation; but, again, how rare is this a factor to arrive at or determine! Some men hold that it is good practice to subtract 23 days from the elapsed time of a woman who has gone 300 days or passed her figured term, thus in reality placing her at only 277 days gestation period.

Barbour has said that the head of the child is the best pelvimeter, so, regardless of whether the labor is delayed or not, watch out for the large child, the degree of bone ossification, position, etc., as great danger is fraught to both mother and child if labor is delayed much longer. It has been said the large child, or one over nine pounds, is or should be a reproach to the physician, but a source of very great pride to the parents.

Being familiar with prolonged labor and its consequent strain on the fortitude and physical endurance of the mother, the doctor should be on the alert and advise appropriate interference, particularly when marked disproportions exist, whether one month before, or at, or one month after the figured term. We can all recall cases where the uterus was overdistended, the pains weak and shallow or, if strong, where the membranes had ruptured prematurely, and a dry birth followed. Again, where the large, firm head did not easily mould or engage, or persistent occipito-posterior positions, with absent rotation as well as the deflection attitudes, and when finally forced through the brim the soft parts were overwhelmed and the ultimate delivery, whether spontaneous or, as more commonly happens, instrumental, was accompanied by extensive trauma and lacerations, producing fistulæ and, more often than not, infection, hemorrhage, and mortality, the baby being endangered by the relative shrinkage in blood supply, asphyxia, strangulation at vulva, and intracranial hemorrhages. Skull fractures and paralyses are always near, while craniotomy and evisceration are not far removed. In the greater number of cases the above type of labors are not normal types for that particular woman, but are to be classed as post-mature cases, and the question naturally looms in the foreground as to the best measures of any kind that are available to thwart or forestall such catastrophes as the ones mentioned above.

Reed, of Chicago, says the fœtal measurements can be very accurately taken and are more accurate and positive than those of the pelvis, thus diagnosing fœtal maturity with much more reliability than dependence upon the irresponsible menstrual history or a carefully observed date of quickening. The method of Ahlfeld, which has long been known but rarely practiced, is used to obtain the length. One tip of the pelvimeter is placed on the upper pole of the child and the other upon the upper border of the symphysis, inside the vulval slit, which is uplifted to the height of the osseous border. Deduct 2 cm. for abdominal wall thickness, multiplying the result by two. This gives child length in centimeters. In ninety per cent of all cases the error is inconsiderable.

McDonald says that a mature fœtus requires a fundus extending 35 cm. above the upper border of

the symphysis. Dividing the height of the fundus in centimeters by 3.5 gives month and its fraction of gestation, and is held by a few good obstetricians to give extremely and reliably helpful data. Perret's method of obtaining the head diameters—the only two obtainable and necessary—is to measure it as it lies more or less transversely across the inlet, without making allowance for the abdominal wall thickness, thus giving the occipito-frontal diameter. O'Keefe, of Kansas City, has devised a simple formula for obtaining the biparietal measurement from the above, *viz.*:

$$\frac{OF + 7}{2} = BP.$$

The further retention of a mature fœtus is held not to be any longer profitable or rarely permissible after the purpose of gestation has been performed, and the above-mentioned measurements have proven that we have a mature fœtus, whether or not our calculations ar eat eight, nine or ten months, even admitting our cherished traditions as to its sacrilegious aspect, it is legitimate and gestation should be terminated. The welfare of two lives is at stake, and after painstaking examination and observation the above data are found, it would seem no hero ever performed nobler deed in preventive medicine than the keen-eyed general practitioner or obstetrical specialist who, by expert skill and deft maneuvers, delivers, by any of the accepted safe methods, a live baby and has a live, proud mother to nourish and care for the baby, as is not the case in an all too sad number of obstetri cdeliveries in this enlightened age.

Nicholson, reporting 70,000 midwife cases, says that but six césarean sections were done for all causes, and that no woman died as a result of forceps or version; concluding that a true prolongation of labor happens, but is rather unusual, subordinating history to physical findings and the ascertained relationship of the presenting part to the fœtus, which should decide for or against interference rather than any fixed number of days of elapsed time. Ballantyne concludes post-maturity has a real existence, but it is almost impossible to diagnose it by any one of its several anatomical or physiological characters. It may, however, be very seriously thought of in case of excessive length, weight, ossification, easy dura mater separation, and associated advanced senile changes in the cord and placenta.

Summary.—The menstruation-delivery interval and sometimes the insemination-delivery interval can be ascertained; but no one has yet come much closer than eight to ten days in calculating the impregnation-delivery interval.

No upward limit for the gestation period has as yet seemed to be definitely decided upon.

We are still unable to assert positively the exact duration of any given case of pregnancy, and also exactly what causes labor to start.

Consequently, we should give our cases that prenatal care they deserve, and should our examinations show much deviation from the normal, there is very little more time to spare before action.

My study convinces me that delayed labor, or post-maturity in the truest sense, is rare but does occur, and in unwatched cases with frightful mortality to mother and babe alike.

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SOME RAMBLING REMARKS ON STATE MEDICINE *

By NORMAN R. PRICE, M.D.
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In the two English-speaking nations the trend toward socialism in medical practice is very widely discussed in medical journals as well as in newspapers and magazines. The prospect of state-controlled medical affairs is not pleasing to the more individualistic members of the profession. The increasing cost, to the public, of medical and hospital care is a related matter of great popular interest. England already has her panel practice; and in America the ever-widening activities of national and state boards and bureaus and county medical units tend strongly toward centralization, in some form, of state-controlled medical practice.

During the past three decades, men of great wealth and with zeal, but not according to knowledge, have poured out their surplus millions to endow the higher schools of medical education and to initiate the so-called surveys and classifications

* Read before the Greenbrier Valley Medical Society at Marlinton, West Virginia, on February 5, 1930.

(notably the oil and tobacco kings, Rockefeller and Duke), and as a result there quickly followed the elimination of the slowly built up and established system of centuries. The medical schools from which we of a former generation derived such knowledge of anatomy and medicine as we possessed at the start of our public professional careers were quickly put out of business by means of the state educational laws that followed.

There is good reason to doubt that this has been a benefit to society at large and to the members of the medical profession as a body. The slowly developed principles of medical education, acting under the law of supply and demand and the customs of the people for centuries, can not be suddenly arrested by the power of huge sums of money suddenly applied without danger of disaster. A frequently referred-to result, accomplished in a decade, is fewer practical general practitioners and a multitude of specialists and surgeons. Few of our youth, except the pampered type with plenty of backing, have the spirit or hardihood to endure the years of incarceration within the halls of learning necessary to obtain the degree, and many of these emerge sapped and lifeless, devoid of initiative or vitality for the battle of building and enduring the strain of medical practice. Some one has remarked that the country doctor is dying out because he ought to die, there being no longer any need or room for that type in the scheme of modern life. Be that as it may, the fact is that the vast majority of the newer graduates are remaining in the cities and large industrial centers.

As it used to be, at least the rural physician was a rather long-lived animal. The mortuary tables of the *Journal of the A. M. A.* prove that a host of physicians are giving up the ghost between the ages of forty and sixty years, in what should be the prime of life—not living to an age when it could be said of the individual that he died full of years and honors. Ambassador Choate once remarked that he had set the age of seventy as the time when he expected to begin really enjoying life, and he expected to hurry up and get to seventy as soon as possible. Arteriosclerosis, kidney and heart lesions, suicide, and automobile accidents are taking far too heavy a toll of medical men who should be in the prime of life at the time of their leaving what, to them, has often been an inhospitable world in which they seemed to fit awkwardly into the scheme of things. Replacements of newer men, practically educated and of good habits and strong constitutions, are not by any means available from the farms from which we should look for such materials, and to which environment they should return to assist in a more equitable distribution of medical men in this country.

Kipling, in his incomparable poem, "The Old Men," which should be committed to memory by every medical man and others as a prophylaxis against premature senility, states the case:

This is our lot, if we live so long and labour unto the end—
That we outlive the impatient years and the much too patient friend:
And because we know we have breath in our mouth and think we have thoughts in our head,
We shall assume that we are alive, whereas we are really dead.

We shall lift up the ropes that constrained our youth, to bind on our children's hands;
We shall call to the waters below the bridges to return and replenish our lands;
We shall harness horses (Death's own pale horses) and scholarly plough the sands.

The Lamp of our Youth will be utterly out, but we shall subsist on the smell of it;
And whatever we do, we shall fold our hands and suck our gums and think well of it;
Yes, we shall be perfectly pleased with our work, and that is the Perfectest Hell of it.

A painful result of the modern trend of state medicine is a lack of esteem in which the medical profession as a whole, and individually, is held by the public generally. Henry L. Mencken has recently taken to praising medical men and commending medicine as an interesting profession. I will admit that it is an interesting occupation. This is proof positive that the average man has the opposite view. Comparing medicine with law, Mencken says that if you employ a physician he does the best he can to help you, without interference from anybody. On the other hand, he says, if you employ a lawyer to defend you in court, another lawyer on the opposite side is doing his damndest to hang you.

To complicate existence and multiply job-holders is characteristic of American life—and always we have the job-holders long after the emergency for which their jobs were created has gone and been forgotten. Recently, a fantastic disease known as psittacosis has been seized on by the sensational news vendors. As a result, the health departments of certain cities have proposed inspection and registration of all parrots imported into this pure country, where barnyard fowls and filth diseases such as colon infections are, of course, unknown.

The great increase of quacks, negro medicine vendors (of which type Pocahontas county has a star of the first magnitude, patronized by our best people); chiropractors, Christian Scientists, and such like charlatans, with their notable financial success,

against whose operations the most stringent medical qualification laws—particularly in our own state of West Virginia—are powerless, is another case in point of the adverse workings of modern medical education and regulation. Far better would it have been to have allowed the medical schools to evolve along rational lines than to be thrown into the confusion and violent uplift of the Rockefeller Foundation (with millions to favored schools). The old deans and professors of the Baltimore medical schools, whom I consider it a privilege to have known in the early years of this century, saw the handwriting on the wall and the end of the practical, workable, middle-class medical education in this country, and the fantastic system of legislation relating to public health that would follow.

The result in public health activities is comparable to the change wrought in the economic life, and otherwise, in this country by the adoption of the Eighteenth Amendment and its legal, legitimate offspring, the Volstead Act, and concurrent state legislation. This may well be a matter of interest to medical men, for, as is well known, and embodied in the state coat-of-arms, "mountaineers are always free" to distill moonshine or manufacture home-brew in the homes for their own use; but *spiritus frumenti* is not recognized as a medicine, nor may it be prescribed legally by a physician.

Far too much of our medical regulation and legislation belongs to the class such as President Hoover designated the Eighteenth Amendment—a "noble experiment"—and which, because of their questionable value or downright detriment to the health and wellbeing of the whole country, should be of particular interest to medical men.

TREATMENT OF DISEASES OF THE ETHMOID AND MAXILLARY SINUSES *

By GEORGE G. SNARR, M.D.
Winchester, Va.

Articles on diseases of the nasal accessory sinuses are usually so filled with historical data and anatomical and etiological relations that the reader is left somewhat bewildered as to what the writer actually wants to impress upon his audience; therefore, I have purposely disregarded these axioms, since they are so well known to all.

Since the title of my paper was sent in, Dr. Morison requested that I outline a few symptoms of sinus disease for the benefit of those who are not primarily interested in rhinological work, that they might more easily recognize diseased sinuses. This would be a very hard thing for me to do, as many victims of diseased sinuses are free from all subjective symptoms.

Acute sinusitis is rarely ever overlooked. It usually occurs with, or shortly after, a rhinitis, influenza, or other similar infection, and is accompanied by pain just below the eye, above the eye, or in the ethmoid region and back of the eye, according to the sinus or sinuses involved, and is usually intermittent. Pain by pressure on the diseased sinus may or may not be present; but tapping with the finger over the diseased sinus almost always causes pain. Pain in the back of the head and neck, even going down into the shoulders, may be due to sphenoiditis. Usually there is a purulent discharge from the side of the nose, according to sinus involvement. Elevation of temperature may or may not be present, and is an unreliable symptom unless placed on a four-hour temperature chart. Pain in the regions of the sinuses are often regarded as neuralgia, and such a tentative diagnosis is the cause of many chronic diseases of the sinuses. A patient with any of the above symptoms, along with or following an infectious disease, should be referred to a rhinologist for a diagnosis.

Now chronic diseases of the sinuses may not show any subjective symptoms, but usually there is a chronic discharge from the nose which is abnormal and which should be investigated. If polypoid tissue is present in the nose, the patient will be unable to breathe through his nose and the nasal obstruction should also be investigated and corrected, whatever the cause.

As I said before, there are chronic diseases of the sinuses which present no subjective symptoms at all, but which are the cause for some serious secondary lesion somewhere else in the body. When you have a patient with a disease such as Bright's disease, arthritis, endocarditis, asthma, and the like, which you believe is the result of a focus of infection elsewhere in the body, refer your patient to a rhinologist for an examination of the sinuses and you may find the primary focus of infection.

Now, back to the original title of my paper. I shall not quote from authority, but give you my method of treating diseases of these sinuses in my private practice. The innumerable methods used by different rhinologists will not be discussed, for lack of time; but the different methods I have tried, I

* Presented before the Eastern Panhandle Medical Society at Charles Town, West Virginia, on March 12, 1930.

believe sufficiently, in the last thirteen years. Remembering the disappointments and failures from my own earlier endeavors, and from the observed end-results of the work of other operators, I have been led to my present convictions. My method is not what could be termed original, but perhaps gathered, and to me proven worthy and applied the way I found best.

Acute ethmoiditis, I believe, can nearly always be cured by non-operative procedure if treatment is started early in the disease. I immediately start these patients on immunogen, giving them daily injections. Aqueous solution of ephedrin hydrochloride is given to the patient, to be used in an atomizer frequently enough to keep the nose in free breathing condition for ventilation and drainage. At the same time the patients are coming to my office for daily injection of serum, I free the nasal chambers of pus and mucus as nearly as possible by gentle suction or nasal douche if necessary. After the nasal cavities are free from all exudate, I envelope the middle turbinate and ethmoid region as nearly as possible with cotton moistened with 20% solution of argyrol, 30% glycerine, and water quotient solvent for 100%. A silk string is tied to this cotton before placing it into the nasal cavity, leaving about one-half inch extending out of the nose. The patient is instructed to leave the cotton in the nose for four or five hours, at which time he can easily remove the packing without assistance. This procedure is repeated daily for a week or ten days, or longer if the case demands it, and thereafter every other day until cured or the condition becomes chronic and needs other measures to effect a cure. For me, the average time required for treatment of acute ethmoiditis is from three to four weeks.

I have seen some cases that looked impossible to treat without some surgical procedure for the relief of nasal obstruction; but my experience as a general surgeon for eight years, that surgical interference in an acute, purulent process should be as conservative as possible, held me back in correcting these deformities during the acute condition, and, to my satisfaction, they recovered as did the other cases. Should I be confronted with an acute ethmoiditis that I thought absolutely necessary for a partial submucous resection of the septum in order to give relief and apply treatment, I would not hesitate to do it. Along with the above treatment I give sufficient laxatives to eliminate toxins from the intestinal tract, and something to promote free action of the kidneys, such as plenty of water and lemonade. Also, the patient is placed under the best hygienic surroundings, with good food and plenty of rest.

The sub-acute cases are handled in the same way until they are cured or become chronic, and in such instance will be discussed along with chronic diseases.

The greatest number of cases of chronic ethmoiditis are found in people with nasal deformities. However, when patients present themselves to me for relief of a chronic ethmoiditis, I first determine if it is a simple ethmoiditis with hypertrophy without nasal obstruction. If such is the case, I give them a fair trial with the same treatment as in acute cases, with the exception of sometimes removing the anterior end of the middle turbinate if it is very large, and giving treatment only every second or third day, but over a longer period of time. Before starting this treatment I explain to my patients the amount of time necessary for the treatment, and that eventually they may have to have surgical interference, and I have found business men, pushed for time, choosing the operation without trying the treatment.

In the event of a failure with treatment, I do a complete intranasal ethmoidectomy. As soon as the acute inflammation subsides, I insert nasal tampons as above described with the addition of a one-half to one per cent ichthyol to the mixture into the ethmoid cavity and allow it to remain two hours. This is done three times a week until the cavity is healed, and is a material aid in lessening the infection and preventing granulations.

If I find a patient with chronic ethmoiditis of any type with a nasal obstruction, or a case with hyperplasia without nasal obstruction, I advise operative interference; and if the patient submits to such a procedure, I do whatever is necessary, such as a submucous resection along with ethmoidectomy. In fact, I do a submucous resection in all ethmoidectomies unless I have an abundance of space in the nose. In a case with hyperplasia, I use the tampons moistened with the argyrol, ichthyol and glycerine mixture every other day until healing is well advanced, and I have not had a return of polypoid tissue in this region.

If there is a tendency to large crust formation and an evidence of atrophy of the intranasal tissues, I have the patient run a gallon of warm saline solution through the nose with a nasal douche apparatus three times daily. I am convinced this will prevent many cases of post-operative atrophic nasopharyngitis. These operations are all done under local anesthesia.

Now as to the treatment of diseases of the maxil-

lary sinus. Acute catarrhal maxillary sinusitis is usually a complication of acute catarrhal rhinitis and will yield, as a rule, to the treatment of the latter. The method of treatment that has given me the best results is the spraying of metaphedrine into the nasal chambers freely every hour or two, and quinine, bella donna, urotropin and camphor administered orally, and a saline cathartic every other morning, for the rhinitis. The patient is given daily injections of combined catarrhal immunogen. I have seen many cases that, I am forced to believe, were acute catarrhal maxillary sinusitis cases that I made a diagnosis from subjective symptoms only, as there were no objective symptoms and transillumination showed symmetrical sinuses, and rceovered along with the rhinitis.

Chronic catarrhal maxillary sinusitis is the result of an untreated or uncured acute infection. If these cases come under my observation when only an hypertrophy of the lining has occurred and with some mucopurulent exudate, I advise and, if they submit, do an operation, making a permanent opening into the antrum through the inferior meatus, without, if possible, disturbing the turbinate bone. Irrigations with normal saline solution is carried on through this opening at intervals of three days. After each irrigation, mercurochrome, 2% solution, is instilled into the sinus with the patient lying on the diseased side, and kept in that position for five minutes. This treatment is carried on until the sinuses transilluminate symmetrically. I shall not criticize any rhinologist for treating these conditions without surgical interference, excluding, of course, nasal deformities; nor shall I doubt the results they claim without surgery; but I must confess I can not do it.

Acute empyema of the maxillary sinus is treated by introducing a trochar into the sinus and withdrawing all the pus possible with a 10-c.c. Luer syringe. I determine if the ostium is patulous by injecting air gently into the sinus with the Luer syringe. If the ostium is open, the sinus is flushed with saline solution until it returns clear. I then inject about 10 c.c. of hydrogen peroxide into the sinus and wait about five minutes, then flush the sinus with saline to remove the peroxide. The sinus is now aspirated with the syringe to get rid of as much saline solution as possible, and when this is done I fill the sinus with a 2% solution of mercurochrome and remove the trochar.

I have been using this method since the latter part of 1926, and I have had only three patients to whom I had to give a second treatment to obtain a cure. The second treatments were given all three patients on the fourth day following the first treatments. I have been fortunate enough to follow up all patients, with the exception of a few from a distance, and I believe they are cured.

Now chronic maxillary sinusitis, from the standpoint of treatment, can be divided into two classes; at least, it is divided that way by the writer. First, all sinuses with pus and hypertrophy only of the lining membrane, in which the treatment is carried out the same as for chronic catarrhal maxillary sinusitis as above described. This type is determined by puncture, washing and lipiodol injection, and an x-ray picture. Second, all sinuses with hyperplasia of the lining membrane are treated with a radical antrum operation. This type is determined in the same manner as the first type. There are many cases that will not require this procedure to determine hyperplasia, as there may be polypoid tissue in the nose and traced to the antrum; but where you have a sinus dark on transillumination, without pain and with no history of sinus trouble, and some mucopurulent discharge from the nose, I believe it is the safer plan to puncture the sinus, wash it out, inject lipiodol, and have an x-ray picture made before deciding the method of operation, if you hope for a cure.

The operation that has given me the best results is a modification of the Denker operation. The only difference between the Denker operation and the operation I do is that a strip of the nasoantral wall about three-eighths of an inch wide is left from the sharp edge of the pyriform aperture, back. The flap of mucous membrane from the floor of the inferior nasal fossa is made in the same manner as in the Denker operation, but is made behind the strip of bone left in the nasoantral wall and placed in the floor of the antrum. There are two advantages in doing this method: First, the bony framework of the face is not weakened; particularly should there be a cause for bilateral operation. Second, the sudden emptying out of an accumulation of discharge at an inopportune time will not occur.

I believe the flap of mucous membrane placed through the opening into the floor of the sinus is of greatest value in obtaining a smooth, permanent opening between the sinus and the nose. At no time have I had to remove any of the inferior turbinate, and I do not believe it necessary if a Denker or this modification of a Denker operation is performed.

After the flap is placed in the sinus, I lightly pack the sinus with one-inch vaseline gauze, leaving the free end in the nose, and then instill with a dropper a 10% solution of argyrol around and through the gauze packing. This packing is not removed until the end of the fourth day.

Since I adopted this method, three years ago, I have not failed in a cure, and the opening in the nasoantral wall remained the same size, smooth on the floor and free from scar.

CASE REPORTS

A SUSPECTED BRAIN TUMOR CURED BY OPERATION ON SPHENOIDAL SINUSES *

By T. W. MOORE, M.D.
Huntington, W. Va.

On September 22, Mrs. J. W. McK. was brought to my hospital on account of persistent headache accompanied by vomiting and convulsive jerkings of upper extremities, muscles of face and neck.

Family history: Father had a stroke recently, at age of 63; mother in good health. Two brothers and two sisters with generally good health. No deaths. Husband not strong, but suffers no specific ailment. Children healthy; no children dead. No diabetes, cancer, tuberculosis, insanity, or epilepsy.

Personal history: Generally very good health. No complications from mild diseases of childhood. Diphtheria without sequelæ at 11 years. Light attack of influenza one year ago. Some headache with drawing back of head last year or so. Eyes weak; teeth fairly good; appetite good until operation on July 31. Had some belching and much gas, usually in evening, lasting sometimes for several days. Rarely vomits. Sour stomach. Bowels move daily without laxative. Quite a lot of trouble with bleeding piles.

Menstruation began at twelve years—four weeks type, lasting four or five days—sometimes cramping before flow. Labors normal. One miscarriage one year ago at two and one-half months. No urinary disturbance.

The above is part of the report of physical examination that concerns us, made by physicians at hospital, July 27, 1929.

On July 31, 1929, she was subjected to the following operation: Low median celiotomy; hysterectomy abdominal complete; right salpingo-oöphorectomy; excision adeno-fibroma of recto-vaginal septum; appendectomy; closure.

Laboratory examination: Blood examination and urinalysis were both negative.

On August 28 she was readmitted to the hospital where operation had been performed July 31, with the following statement:

"I had been getting along just fine and gained five pounds since I left the hospital, aside from a general headache that I felt a few days before my discharge and has continued almost constantly since then, two or three hours in one part of the head, then in another region. Scalp very sore, especially back of eyes and ears. Soreness back of neck. Have been up only to meals and sit in chair a little."

Radiographs were taken of the sinuses, which showed clouding of both maxillary sinuses and there was a discharge of pus from ethmoids. Local treatment with ephedrin helped to clear up the sinus condition and she showed some improvement. The medical consultant examined the patient at this time, and felt that there was some suggestion of a brain tumor in the way of a choked disc.

Lumbar puncture was done, the spinal-fluid pressure being normal. The spinal-fluid examination was entirely negative, including Wassermann test of same.

On September 22 the patient was brought to me, complaining of intense headache in occiput and back of neck; exceedingly nervous, with attacks of jerking of head and upper extremities. Nausea and vomiting for the past week. Patient and her friends were quite insistent that all of her symptoms dated from the use of spinal anesthesia at the time of her abdominal operation, and were unable to recall her having had headaches prior to that time, although the history taken when admitted to the hospital in July shows that she had had headaches and some retraction of head for several years.

My examination showed pupils normal in size and equal; right one reacting more sluggishly than the left, and after dilatation with euphthalmine and cocaine the right pupil failed to contract to normal, remaining larger than the left for several days after operation. Maxillaries and frontals were clear to transillumination.

At times the patient was able to obtain, by clearing the throat, a small amount of purulent secretion.

* Read before the Southern Section of the American Laryngological, Rhinological and Otological Society, Roanoke Virginia, January 18, 1930.

X-ray showed maxillaries and frontals to be negative, but pus was present in sphenoids.

Temperature was normal at time of admission; pulse 80, respirations 22.

Consultation with hospital staff where patient had been operated upon and had returned for treatment for headaches brought out the fact that they had concluded her symptoms suggested brain tumor and that she had a choked disc. This we were unable to confirm, the discs appearing normal to my associate and myself.

The patient's vomiting ceased after discontinuing morphine, which she had been having in quantity sufficient to control her pain.

During the night of September 23 her temperature went up to 103°; pulse to 120 and became irregular. On September 24 I drained the sphenoidal sinuses. It was necessary, first, to do a submucous resection and remove part of both middle turbinates, after which I entered the sphenoidal sinuses. The right one was very large and filled with foul-smelling, cheesy secretion. I enlarged the opening downward to the floor of the sinus and toward the temple. I also opened left sinus, which had a small amount of fluid therein. I washed out the sinus after the second day; every day, and for almost two weeks, the washings had a foul odor. The patient's headache ceased immediately after the operation. Her nervousness gradually subsided, but was not entirely gone for almost a month. The right pupil did not return to the same size as that of the left for about ten days.

The last of October the patient returned to her home and resumed her duties as a farmer's wife, apparently entirely recovered, which is verified by a post card received:

"January 9, 1930. Dr. Moore: Received your letter the sixth. I am feeling fine; in good health. Am doing all my house work and have never had the headache but twice to amount to anything since my operation."

I am reporting this case because the patient and her friends, including the family physician, attributed her headache to the spinal anesthesia.

REPORT OF CASE OF TUBERCULAR SALPINGITIS AND ADENOCARCINOMA OF OVARY

By ROBERT KING BUFORD, M.D., F.A.C.S.
Charleston, W. Va.

The following case seems interesting enough to report, due to its infrequent association. I was unable to find a similar case in over eight hundred records of pelvic infections that were recently reviewed in my files.

Mrs. R., age 38, admitted to my service February 4, 1928, complaining of pelvic pain of one month's duration, with history of more or less dysmenorrhea since the age of thirteen. Menstruation regular but scanty. One pregnancy about ten years ago, which terminated in an abortion at two months.

Family history not suggestive other than above stated. Patient's past history irrelevant with the exception of a purulent vaginal discharge lasting about two weeks in the summer of 1927. Onset of present illness, one month before admission. Began with severe pain in left side of pelvis, accompanied by chills, fever, and moderate bleeding. Also some nausea and a slight amount of vomiting. Temperature 100.6° F.

Physical examination revealed a rather frail, somewhat anemic woman of 38, with no definite physical findings except that she had some lagging in upper left chest with impaired resonance and some inconstant coarse, crackling râles. Heart was negative, but rate was somewhat accelerated—110 per minute. Blood-pressure, systolic 98, diastolic 68. The abdomen was the scaphoid type. Tenderness was elicited in both lower quadrants; no increased muscle tension. Liver dullness extends below costal margin. The spleen and kidneys were not palpable. Spine was freely movable, joints normal, and reflexes active.

Pelvic examination: No external hemorrhoids. Perineum intact; good support. Cervix showed hypertrophy, laceration, and infection. Uterus normal in size, position, and fixed. A palpable mass was found in right broad ligament, size of a baseball, firm in consistency. There was a smaller mass in left broad ligament, extending to the *cul de sac*, softer in consistency.

Laboratory findings: Catheterized specimen of urine was negative. Blood picture showed 3,500,000 erythrocytes; hemoglobin, 70%; 11,500 leucocytes with differential of 77% polymorphoneutrophiles and 23% lymphocytes. Blood sedimentation rate was 15; seven days later, 30.

A preoperative diagnosis of subacute tubo-ovarian disease was made.

The patient was kept under observation and given glucose and fluid for her acidosis and dehydration. She continued to run a low-grade temperature from 99° to 100°. Her leucocyte count dropped to normal. The blood sedimentation rate remained

stationary, around 30, and showed no clinical improvement and no change in pelvic findings. Operation was advised after seven days' treatment and observation.

Operative findings: February 11, 1928. Ether anesthesia, drop method. Uterus normal in size and position, fixed by both tubes and ovaries forming separate pelvic inflammatory masses extending into both broad ligaments. Both tubes were adherent and contained pus. Tubercular pearls were scattered over both tubes and ovaries. No involvement of uterus and peritoneum. Left ovary cystic throughout. There was a neoplasm right ovary, size of a large orange, firm in consistency. Cut section after removal showed a gross appearance of adenocarcinoma. Appendix thickened, injected, and adherent to right pelvic inflammatory mass. Upper abdomen was not explored.

Operation: Both tubes, ovaries, and appendix removed. The uterus was not removed, due to the patient's poor condition. There were raw areas in the *cul de sac* and broad ligaments which could not be peritonized, the adhesion being very dense. A quarantined drain, made from a rubber glove, was used. Wound was closed in usual manner.

Pathologist's report: The left tubo-ovarian mass measures 7x3x2½ cm. It presents dense adhesions. The cut surfaces present several smooth-walled follicular and hemorrhagic cysts. One cavity, which has been incised, contains a caseous débris.

The right tube measures 8 cm. in length. The diameter varies from ½ to 2½ cm. Its surface is roughened by adhesions. The lumen is nearly obliterated. The ovary measures 9x8x7 cm. and is composed of soft, friable tissue.

The appendix measures 3x½ cm. The surface is roughened by adhesions. The lumen is obliterated.

Microscopic findings:

Diagnosis: Left tubercular salpingitis and oöphoritis. Adenocarcinoma of right ovary.

Progress: Patient reacted well from anesthesia and had a stormy convalescence for several days. Free drainage for ten days. Moderate fat infection. The wound had healed when patient was discharged from hospital, 21 days after operation.

End results: The patient consulted me a few days ago. She stated that she felt quite well and had gained 25 pounds in weight since operation. Wound healed; good support; no hernia formation. Pelvic examination was negative.

Discussion

According to Norris, a combination of tuberculosis and neoplasm of the genital tract may occur in one or two ways. A tuberculosis may be implanted upon a genital tract, already the seat of a neoplasm, and involve the tumor either on the surface or, less frequently, in the substance of a new growth. The reverse may occur; that is, a neoplasm may develop from the genital tract, already the seat of tuberculosis. The pathological process resulting from either of these combinations is concerned. In other words, a combination of tuberculosis and a neoplasm may be purely an accident, the one having no relation to the etiology of the other.

Morgagni was the first to recognize genital tuberculosis.

We owe much of our present knowledge of tubercular salpingitis to Hegar's monograph, published in 1886. One in every thirteen inflammatory tubes removed in the Johns Hopkins Hospital was tuberculous.

Tubercular salpingitis was found present in eight per cent of my series of eight hundred cases of pelvic infections. They were all secondary to foci in other organs. Tubercular salpingitis differs from other pelvic infections by the little, glistening tubercules scattered over the pelvic organs and the adjacent peritoneum and often disseminating over the intestines and abdominal wall. The adhesions are very dense in the chronic state.

In two hundred cases reported by Greenberg, the uterus was tuberculous in 72.6 per cent; ovaries in 33 per cent; cervix in 3.5 per cent; the vagina but once in 0.5 per cent. In 68 per cent there was coincidence tuberculous peritonitis. In three per cent, tuberculous appendix, and in two per cent an associated tuberculous of the urinary tract. In 3,514 necropsies on females, Schlimpert of Dresden, in 1914, found gross tuberculous lesions in 2,173—61 per cent—with a relative anatomical frequence as follows: Lungs 84.3 per cent, meninges 3.3 per cent, bones 2.5 per cent, pericardium 2.2 per cent, urinary tract 1.4 per cent. Such data makes it clear that tuberculosis in the pelvis is a local manifestation of a systemic affection and points to the method of treatment necessary for success. We must consider the entire organism and ever recognize the primary importance of the original focal zone.

Tuberculosis of the ovary occurs in about one-third of the involved tubes. The cervix is affected in about three or four per cent of pelvic tuberculosis. The disease occurs most commonly during the child-

bearing period, twenty to forty years of age. In the inactive and quiescent forms there may be no symptoms and is found unexpectedly during abdominal operations for other indications. In the full-blown disease or an active phase, the symptoms may exhibit a close parallelism with a gonorrhea salpingitis, making it impossible to clarify the diagnosis before operation.

The most important local symptoms are abdominal pain, fever, tenderness, sometimes slight enlargement of the lower abdomen, dysmenorrhea or other menstrual disturbances, sterility, dyspareunia, leucorrhea, constipation, nausea, vomiting, and evidence of a local peritonitis with leucocytosis are the most important.

Adenocarcinoma may develop from the germinal epithelium or follicular epithelium, or in other cases a previously benign tumor becomes a secondary malignant one. They may be differentiated: (*a*) solid carcinoma, (*b*) carcinomatous cyst. The former is less common. It may infiltrate the ovary diffusely and enlarge the organ, without, however, changing its form for a longer time. Later it may reach the size of a man's head, and is then spherical with a nodular surface. The medullary carcinoma, the more common, has a soft, marrowlike section surface. White or marbled scirrhous carcinomas are harder.

All carcinomas of ovaries tend to be bilateral; carcinomatous cysts arise from transformation in a simple cyst adenoma or a papillary cyst adenoma, or they are malignant from the beginning; that is, true cysts (Pfannenstiel). In both cases there is a superficial resemblance to a benign cystic adenoma. In other cases the carcinomatous foci are so small that it is only by finding metastasis, particularly in the peritoneum and in the lymph nodes, that the malignant nature of the cyst is made manifest.

Primary adenocarcinoma of the ovary is found in ten to twelve per cent of ovarian neoplasms. Kelly found 36 per cent bilateral; Tippert, 46 per cent bilateral; Pfannenstiel, 90.9 per cent, including cases in which cancer later developed in the remaining ovary.

Pfannenstiel found the decade between forty-five and fifty-five years most prone to cancer of the ovary.

Ascites is found in 78 per cent. Intraligamentous tumors rarely cause ascites.

The primary solid growths form small or medium-sized ovoid or round, often nodular tumors, which are film and well encapsulated until the tumor tissue breaks through the envelop and spreads in mushroom form through the rent.

Carcinoma of the ovary is the most insidious disease of the generative tract. The majority of the cases are incurable when they come under observation. There are, after all, very few early symptoms. Increase in the size of the abdomen is usually the first thing noticed by the patient, due to secondary carcinomatous masses in the omentum and ascites. The history usually shows that for some time there has been pelvic pain and some disturbance of the bladder and bowels. In young women there may be some menstrual irregularity and menorrhagia. In advanced cases the patients lose weight and strength rapidly. Irregular indurated masses in the *cul de sac*, the broad utero-sacral and utero-vesical ligaments, are discovered through pelvic examination.

ABSTRACTS

Placenta Prævia

J. P. GREENHILL, Chicago, "The Present-Day Treatment of Placenta Prævia" (*Surgery, Gynecology and Obstetrics*, January, 1930). — Dr. Greenhill first defines placenta prævia as the development of part or all of the placenta in the zone of dilatation of the uterus, and he mentions the three types usually considered. He briefly discusses the etiology and gives as an incidence of this condition occurring about once in every 130 cases in certain geographical regions and only once in 1,500 cases in others. The multipara is affected about ten times as frequently as the primipara. Under diagnosis he emphasizes the following facts: The painless, causeless, uterine hemorrhage in the third trimester of pregnancy is almost pathognomonic of placenta prævia. The quantity of blood lost in the first hemorrhage has no significance, and unless treatment is instituted there is a recurrence of bleeding, and each time it is greater than the preceding one. Vaginal examination, with the finding of a portion of the placenta over the external os, will confirm the diagnosis. However, he warns against bimanual examination; if it must be made, all care should be taken. Since most of these cases absolutely belong in a hospital, there is nothing to gain by vaginal examination when the patient is hemorrhaging.

The mortality varies considerably in different parts of the world. Hitschmann, in 1921, from statistics, found the mortality rate of 6.5% in the mother and 40% in the fœtus. The causes of maternal deaths in placenta prævia are due to: (1)

Hemorrhage; (2) septicemia; (3) rupture of the lower uterine segment. The fœtal deaths are caused by: (1) Asphyxia; (2) prematurity; (3) injury during version or extraction; (4) monstrosities. Treatment is usually divided into four methods: (1) Rupture of the membranes, with or without firm packing of the vagina; (2) Braxton-Hicks version; (3) the colpeurynter; (4) césarean section. The type of operation to be performed depends entirely on existing conditions and the skill of the attending physician. He draws a very definite line between home and hospital treatment, and emphasizes that every patient with placenta prævia should be sent to a hospital; that, unless there is very active bleeding, packing is not necessary prior to transportation to the hospital; that, if packing is done, the vagina should be well packed and counterpressure from above should be made with an abdominal binder.

Home treatment: Careful vaginal examination should be made, and if the cervix is undilated the membranes should be ruptured and the vagina packed with cotton pledgets. When the cervix is sufficiently dilated, a Braxton-Hicks version should be performed. This necessitates anesthesia for complete relaxation; one foot only is delivered, and the breech used as a tampon to control bleeding. Then allow nature to carry out spontaneous delivery.

Hospital treatment: This depends entirely upon the condition of patient on admission. If dilatation is complete, the child may be delivered by forceps or version. The Braxton-Hicks method may be used, especially is the child is not viable. If the child is alive, a metreurynter has its place, but must be properly used. He emphasizes the proper treatment in the third stage, since additional hemorrhage, though small, may be fatal. In the event of bleeding, it is better to deliver the placenta manually but under the strictest asepsis. Should the child not be viable, one may temporize only if bleeding is slight, and the uterus should be emptied as soon after viability as possible. The most modern treatment, however, is césarean section, the type of operation depending on the surgeon.

Quoting De Lee, four objects should be accomplished in the treatment of placenta prævia: The hemorrhage should be stopped, the uterus emptied, hemostasis assured, and anemia combated. Césarean section has undoubtedly reduced mortality. Blood transfusion should be thought of and used frequently. In infected cases, a hysterectomy should follow the removal of the child in césarean section. He gives the child secondary consideration, although emphasizing the fact that césarean section gives the child the best chance.—B. I. GOLDEN, M.D., Davis Memorial Hospital.

Eclampsia and Albuminuria

JESSIE C. B. SYM, "The Ultimate Prognosis in Cases of Eclampsia and Albuminuria of Pregnancy" (*The Lancet*, October, 1929).—Eclampsia is always severe, but the severity of albuminuria of pregnancy varies from that of mild in the latter weeks to "preëclampsia." While the prognosis for the mother is good, that of the fœtus is poor. According to this author, albuminuria occurs in 3.5% of all pregnant women. He raises the point that if there should be any ill effects later or any detriment to the future bearing of children, then it may be more serious than eclampsia.

From a study of 74 eclamptic women the author found that the average age of occurrence was 27, and 58% occurred in primiparæ. Only three had eclampsia in two pregnancies.

The chances for recurrences of albuminuria are great; yet in only a small number is it possible to detect renal damage in the non-gravid state. More than half the subsequent pregnancies are abnormal, and more than half develop toxemia again.

Recurrences of toxemia are more common after albuminuria than after eclampsia; but, if the two are considered together, 37.9% are complicated by late toxemia. Since first pregnancies constitute from one-fourth to one-fifth of all pregnancies, the liability is ten times as great in primiparæ as in multiparæ. The prognosis, so far as future childbearing is concerned, is better after eclampsia than after albuminuria.

This author lists the types in which albuminuria occurs. First are those with definite renal impairment, and in this group the pregnancy tends to increase the damage. Second is the group of the late toxemias, and third a group of unknown origin. As a rule, in the last-named group the kidneys are normal during the non-gravid period. However, under the stress of another pregnancy there is great likelihood of a recurrence of the kidney damage.

If permanent renal changes do occur, they are indistinguishable from a nephritis of the mixed type.

The author finally advises that, in order to properly observe these cases, the following scheme should be carried out: They should be in a hospital for three weeks postpartum, where they may obtain the benefits of frequent urinalysis, blood-pressure estimations, renal-function tests, and, if indicated, blood

chemistry determinations. They should have an examination of the fundus oculi. The case should be reëxamined from the above standpoints three months later. If there is no abnormality at this time, the patient should report one year later. In case some abnormality is found, the patient should report at the end of six months and again at one year. Changes that persist for a year after delivery should be considered permanent. The patient should be instructed to report to her attending physician at once in the event that she again becomes pregnant, and all collected data should be given the attending physician.—R. J. CONDRY, M.D., Davis Memorial Hospital.

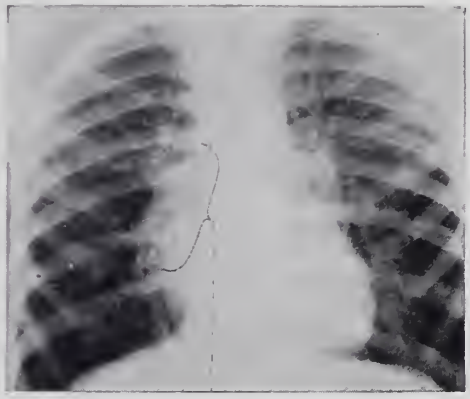
TUBERCULOSIS ABSTRACTS

Tuberculosis in Children

Current medical literature reflects a widespread interest in childhood tuberculosis. Practitioners are realizing the importance of recognizing the disease in its early stages, while it is yet possible to curb its insidious extension. "Tuberculosis in Children," by J. A. Myers, which has just issued from the press, limns a clear and homogeneous picture of this complex subject. It describes both the childhood type and the adult type of pulmonary tuberculosis as well as non-pulmonary tuberculosis in children. Long experience as chief of staff of Lymanhurst, in Minneapolis, America's first school of its kind for tuberculous children, gives perspective to Dr. Myers' observations and probably accounts also for those rare sparks of human sympathy which pervade the book, from which the following briefs have been abstracted:

That pulmonary tuberculosis as commonly seen in the adult is preceded by a developmental stage, vaguely designated as the "pre-tuberculous stage," which is more or less concealed or latent, has long been appreciated. Confusion has arisen out of such synonymous terms as infantile, juvenile, tracheobronchial, hilum, primary complex, Gohn's tubercle, employed by various writers to designate this stage. This confusion is largely dissipated by the definition adopted by the American Sanatorium Association in 1929, and to which the author subscribes; namely, "Childhood type of tuberculosis is the term used to describe the diffuse and focal lesions in the lung and adjacent tracheobronchial nodes that result from a first infection of the pulmonary tissue with the tubercle bacillus." Roughly, the distinguishing feature between the childhood type and the adult type of pulmonary tuberculosis is that the former represents the reactions of the bacillus on virgin or non-sensitized soil and is characterized by cell proliferation, while the latter is in the nature of a reinfection on sensitized soil and tends toward destruction of tissue.

Wide Variety of Lesions.—How the body will withstand the initial infection is determined largely by the dosage of the bacillus and, to some extent, by anatomical differences dependent upon the age of the individual. The resulting pathology may vary widely from a rapidly progressive, disseminated, miliary involvement to a single, small, inconspicuous nodule. A rather typical or common form seen in children of the school age is that in which the initial lesion may appear anywhere in the lung but most commonly at the periphery, followed quickly by an involvement of the lymph nodes draining the infected area. Coincident with this first encounter of



Tuberculous lesions of the childhood type. The mother of this child died a few months after the picture was taken.

the body cells with the tubercle bacillus, the entire body becomes sensitized or allergic. The primary lesion may be so small as to escape detection by the x-ray. The lymph nodes which have become enlarged, later caseous, and then calcified, cast definite shadows on the x-ray film.

Symptoms and Physical Signs.—The diagnosis of childhood type of tuberculosis is not complete until the extent of the involvement and its progress have been determined. A history of exposure to tuberculosis from father or mother or from a close associate is of great significance. There are no characteristic symptoms; the child may or may not be underweight; he may show signs of fatigue and occasionally exhibit a rise of temperature of a degree or two. But even these vague symptoms may be absent.

Similarly, physical signs are either absent or untrustworthy, inasmuch as the pathology in early cases is not sufficient to give rise to characteristic physical signs.

Two procedures, however, enable the practitioner to make a diagnosis: the tuberculin test and the x-ray. The tuberculin test determines infection. Myers recommends the intracutaneous technique, not only because it is more certain but also because the variations in the reaction give some clue as to the extent and activity of a tuberculous process. This test should never be omitted, even in older children. The x-ray pictures the lesions, particularly those that are calcified. No examination for suspected tuberculosis among infants and children is complete without this aid, though a negative x-ray does not necessarily rule out tuberculosis; miliary disease may progress to a fatal outcome while yet the x-ray picture is clear; and focal lesions in the parenchyma and the hilum may be so small as to cast no shadow.

Close Contact the Important Factor.—The author discusses at length the etiological factors, with special reference to the communicability of the disease. The idea that tuberculosis is inherited is, of course, no longer tenable, but the observation of the older writers that "tuberculosis runs in families" is confirmed and explained on the basis of early infection through close contact with adult members of the family. Drawing on his rich experience, Dr. Myers cites numerous cases to illustrate the need of ferreting out the source of infection; for example:

"A student nurse was diagnosed tuberculous in September, 1927, and placed in an institution under treatment. This fall, she is resuming her training. An older sister was examined, and, although she did not have the adult form of tuberculosis at that time, there was unmistakable evidence of the latent childhood type in her chest. What was the source of the exposure? The older sister was inclined to believe that she might have developed the disease through intimate contact with her sister. However, this did not seem probable, since her disease appeared far older than that of her sister. According to the history, there had never been a case of tuberculosis in their family. In August, 1929, we were asked to see the mother, who had been brought to a hospital. She had frank pulmonary tuberculosis with bacilli in the sputum."

The Teen Age.—During the teen age, tuberculous lesions of the adult type begin to appear with greater frequency. They may be seen in all stages of development and retrogression. Evidences of tuberculosis in children, however slight, must never be ignored, for, though immediate danger may not seem to be imminent, a serious outcome is likely to follow unless prompt treatment is instituted. In general, the treatment consists in preventing further exposure of the child to tubercle bacilli, together with common-sense hygienic care.

Campaign During April.—During April, 1930, tuberculosis associations throughout the country will call to the attention of the public the importance of discovering tuberculosis in its latent stage in children. More than five million pamphlets will be distributed; two hundred thousand posters and six thousand billboard posters will be displayed. Newspaper articles, lectures, motion pictures, and many other publicity devices will also be called into play. For physicians who desire it, there will be made available a 32-page brochure on "The Childhood Type of Tuberculosis" by Chadwick and McPhedran. It treats of the diagnosis, prognosis and treatment of the condition, describes the technique of the tuberculin test, and interprets the reaction by means of color plates. There are six excellent x-ray pictures reproduced by the "aquatone" process, with interpretations. Ask your tuberculosis association or the National Tuberculosis Association for a copy.

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PRESIDENT'S PAGE

THE State Meeting at White Sulphur is only six weeks in the future, and it is the desire of all the state officers, particularly the president, that every member who can possibly do so attend. White Sulphur Springs, with the surrounding countryside, is one of the most beautiful spots to be seen anywhere in the world—certainly one of the showplaces of America—and in springtime is doubly gorgeous. Moreover, it is probable that the work of the average physician is lighter in May than in any other month of the year. The hotel rates granted us for the meeting are certainly as reasonable as could have been expected. Let each of us, therefore, plan ahead of time to be on hand.

The Scientific Committee has arranged an excellent program, and there will be plenty of recreation as well. Bring the wife; she's entitled to the trip, and the officers of the Ladies' Auxiliary are planning an enthusiastic meeting. All signs indicate a good time for everybody. Come one; come all!

Walter E. West

EDITORIAL

The New Code

A special session of the West Virginia legislature is now under way in Charleston, having been called by Governor Conley for the purpose of considering the new code for this state. Thus far, no definite action has been taken; but there is every indication that the new code, with some modification, will pass. A special code committee, consisting of 15 members from each house of the legislature, has been appointed and is meeting daily to go over the sixty or more chapters. A ruling has been made that no new matter may be submitted for the code; that either the new code provisions shall stand or the old code provisions shall be reinstated.

The section of the new code of greatest interest to the members of the Association is known as Chapter 30, dealing with professions and occupations. The attorney for the Association, together with the committee on legislation, has gone carefully over this chapter and has reported that there are no changes of major importance to the medical profession. The chapter in question deals with the medical doctor, the nurse, the chiropodist, the osteopath, the midwife, and the chiropractor.

One change of considerable interest has been made in the section dealing with the nurses' board of examiners. Under the new code, the governor will have power to appoint an entirely new board of examiners on or before the first day of July, 1931. Members of the present board will be eligible for reappointment. The section relating to nurses also provides for the employment of a full-time secretary to the board at a salary of $200 per month.

There is one change in Chapter 44 of the new code that is receiving most of the attention of the legislative committees of both the Association and the hospital organization. A new provision has been inserted in Chapter 44, giving doctors and hospitals preferred claims up to $50 against insolvent estates of deceased persons. Heretofore, only embalmers and undertakers had such preferred claims, and the doctors and hospitals were numbered among the common creditors. The West Virginia State Medical Association has attempted, on numerous occasions, to get bills through the legislature embodying the same principle, but with no success. It will be a decided advantage to the doctors and to the hospitals of West Virginia if this provision in the new code goes through. Present indications are that it will not meet with any great amount of opposition and that it will become a law of the state.

In reporting on Chapter 30, the attorney for the West Virginia State Medical Association dealt mainly with the provisions involving medical doctors, osteopaths, and chiropractors. The sections, with a few minor changes, were the same as they were in the old code. The attorney's report pointed out that the new code on professions and occupations was somewhat better than the old code, as far as the doctors of medicine were concerned.

That many sections and chapters of the new code will be revamped is a foregone conclusion, inasmuch as the code committee is holding daily hearings for this special purpose. Also, if any credence can be placed in legislative gossip, the new code will be passed by both houses. Unless some drastic changes are made in the new code, the members of the Association can well afford to pull for its passage.

Members and Delinquents

On and after the first day of April, 1930, all members of the West Virginia State Medical Association whose dues have not been reported to the office of the executive secretary will be placed on the delinquent list. Their names shall also be removed from the mailing list of the WEST VIRGINIA MEDICAL JOURNAL, and they will have none of the privileges or benefits of membership.

The membership situation for 1930 is considerably better than it has ever been at this time of the year. Already more than 75 per cent of the total membership has been reported, with a number of county societies in the 100 per cent column. The last few days in March and the first few days in April invariably bring in a dozen or more last-minute reports on membership from secretaries who wish to keep their members off of the delinquent list. When this last-minute rush is over it is estimated that between 85 and 90 per cent of the members of the Association will be in good standing.

In removing the names of delinquent members from the JOURNAL mailing list, the publication board is only following the postal regulations for second-class mailing permits. Just as soon as a delinquent member pays his dues to the Association, his name will be placed back on this list. In case a member remains delinquent all year, his name is, of course, dropped from the Association records and he is automatically suspended.

All members of the Association whose dues are not yet paid are urged to take care of this matter

with their county secretaries at once. And all county secretaries are urged to report as soon as possible on all dues that have been collected to date.

ANNOUNCEMENTS

Study of Ascariasis

The committee on scientific research of the American Medical Association has made a grant of $1,200 to the Medical College of Virginia, Richmond, for the study of lung involvement in human ascariasis. This investigative work will be directed by Dr. F. J. Wampler, professor of preventive medicine, and Dr. Lee E. Sutton, assistant professor of pediatrics. Rather extensive field work as a part of the proposed study will be undertaken during the coming summer.

Mental Hygiene Congress

The first International Congress on Mental Hygiene will be held in Washington, D. C., on May 5 to May 10, 1930. The administrative office of the Congress is located at 370 Seventh Avenue, New York City. Headquarters during the congress will be located at the Willard Hotel, Washington. Attendance is not limited to members of particular organizations or representatives of special professional groups. All who have an interest in mental hygiene will be welcome, it is announced.

"The Hebrew Physician"

The second issue of *The Hebrew Physician* (*Harofeh Hoibri*), the only Hebrew medical journal published outside of Palestine, has recently made its appearance. The journal is under the editorship of Dr. Moses Einhorn and Dr. L. M. Herbert, of New York. It consists of 180 pages and contains numerous articles on general medical subjects, including a copy of the manuscript on "Hemorrhoids" by Shlomo Eben Ayub of Badrash, France (1265 A. D.). A special section is also devoted to new Hebrew medical terminology. Offices of *The Hebrew Physician* are located at 983 Park Avenue, New York City.

Birthday of Dr. Welch

Plans have been completed for the celebration of the eightieth birthday of Dr. William Henry Welch in the Hall of the National Academy of Sciences, Washington, D. C., on April 8. One of the purposes of the celebration is to focus attention on the problems yet to be solved in public health and other fields where Dr. Welch has given pioneer service. It is understood that a national radio hook-up has been arranged for, and that many of Dr. Welch's former students, unable to go to Washington, will hold simultaneous celebrations in other parts of the country.

European Summer Course

The ninth European summer course in otolaryngology and in ophthalmology for graduates in medicine will be given in Vienna, Austria, this coming summer, under the direction of Dr. George W. Mackenzie. All courses will be given in English. Interested doctors should communicate with Dr. Mackenzie at 1724 Spruce Street, Philadelphia, Pa.

Council on Physical Therapy

The Council on Physical Therapy of the American Medical Association has just issued reprints of its interesting report that appeared in the February 8, 1930, issue of the *Journal A. M. A.* The introductory note sets forth that the Council "realizes that this report falls far short of the ideal. The report has, however, the merit of offering a solution that is immediately available. After it has been placed in operation, biophysics and more thorough instruction in electrophysiology and pathology can be added by slow degrees to the medical curriculum."

COUNTY SOCIETY NEWS

Raleigh County

The regular meeting of the Raleigh County Medical Society was held at the Black Knight Country Club at Beckley at seven o'clock on the evening of March 20, with 27 members and two visitors in attendance. An excellent dinner was served, following which Dr. A. U. Tieche, president, called the meeting to order. The first order of business was a talk by Miss Grosscup, representing the Red Cross, describing the scope and character of nursing service contemplated for the Beckley community and requesting the endorsement of the society. Action on this matter will be taken at the April meeting.

Two new members, Dr. K. G. Khorozian and Dr. R. H. Edwards, were taken into the society at this meeting after they had been favorably reported upon by the membership committee. The name of Dr. J. F. Biggart, of Mullens, was proposed by Dr. F. L. Banks, and was referred to the committee on membership.

The scientific program consisted of a paper on "Neonatal Hygiene," by Dr. W. W. Koiner, of Beckley. A film on the preparation of biologicals was also presented by Mr. Charles Stevens, of Baltimore, through the courtesy of Parke-Davis and Company. The meeting adjourned after the society had voted to hold all future meetings at seven o'clock instead of at six o'clock.

W. W. KOINER, Secretary.

Fayette County

The Fayette County Medical Society met in the court house at Fayetteville, W. Va., on Tuesday, March 11, 1930. There was 40% attendance of the paid-up membership. Dr. Robert P. Woods, of Oak Hill, was appointed president for the rest of the year, to succeed Dr. Milton C. Borman of the Montgomery Clinic. Dr. C. W. Stallard, of Montgomery, was appointed secretary-treasurer for the rest of the year, to succeed Dr. H. A. Walkup, of Mount Hope, who has been ill for several months.

The scientific program consisted of papers by the following: (*a*) "Public Health," by Dr. H. H. Puckett, of Fayetteville; (*b*) "Acute Otitis Media," by Dr. E. I. Davies, Montgomery Clinic; (*c*) Case report of a child with miliary tuberculosis complicated by tuberculous meningitis, by Dr. Milton C. Borman, Montgomery Clinic.

C. W. STALLARD, Secretary.

Greenbrier Valley

The regular meeting of the Greenbrier Valley Medical Society was held at the Greenbrier Valley Hospital at Ronceverte on the evening of March 18, with Dr. H. L. Goodman, president, in charge. The speakers included Dr. Walter E. Vest, of Huntington, president of the West Virginia State Medical Association; Dr. H. C. Solter, of Marlinton, and Mr. J. W. Landon, of Ronceverte.

Dr. Vest spoke on organization and the value of organized medicine. He also discussed the address by Dr. Solter, which was an interesting talk on "Medical Legislation and Organization." Mr. Landon read an instructive paper on "Blood Chemistry." At the close of the scientific program a delightful lunch was served in the hospital dining room.

Those present were: Dr. H. L. Goodman, Dr. H. D. Gunning, Dr. H. C. Solter, Dr. J. M. Yeager, Dr. H. W. McNeel, Dr. N. R. Price, Dr. J. G. Leach, Dr. C. F. Mahood, Dr. J. L. Richardson, Dr. B. L. Traynham, Dr. H. L. Kirkpatrick, Dr. D. G. Preston, Dr. J. W. Compton, Dr. J. D. Arbuckle, and Dr. A. D. Ferrell. The visitors were: Dr. Vest, Dr. G. S. Hartley, of Clifton Forge, Va.; Dr. W. L. Fleece, of Clifton Forge; Dr. L. C. Tharsher, and Mr. Landon, of Ronceverte.

A. D. FERRELL, Secretary.

Monongalia County

D. C. Clark, D.D.S., was the scientific essayist at the February meeting of the Monongalia County Medical Society, which was held in the junior high school library at Morgantown. His subject was "Oral Dental Infection." Dr. J. O. Rankin, of Wheeling, presented a most interesting paper on "Treatment of Fractures" at the meeting held in the school library at Morgantown on the evening of March 4. These two meetings were well attended and there was considerable discussion on both of the papers mentioned above.

G. R. MAXWELL, Secretary.

Ohio County

Dr. George M. Lyon, of Huntington, was the scientific essayist at the March 7 meeting of the Ohio County Medical Society, which was held at the Elks' Club in Wheeling. His subject was "Treatment of Epidemic Meningitis and Its Complications." Discussion was opened by Dr. W. M. Sheppe and Dr. A. T. Goodwin.

Dr. J. O. Rankin, vice-president, presided at the meeting in the absence of Dr. Howard T. Phillips, president. Before the introduction of the speaker, Dr. Rankin announced the speakers for the next two meetings. Dr. William S. Middleton, of the University of Wisconsin, will address the society on March 21, and Dr. George Wilson, of the University of Pennsylvania, will speak at the first meeting in April.

Mason County

The regular quarterly meeting of the Mason County Medical Society was held at the Lowe Hotel, Point Pleasant, on the evening of March 20 at six-thirty o'clock. A fine dinner was served at the hotel at that hour, following which the members and visitors adjourned to the meeting room for the scientific program. The members of the Mason County Medical Society held a short business session just preceding the dinner, at which time a resolution was passed favoring the promotion of a tri-county society composed of Mason, Jackson, and Putnam counties. The society also went on record as favoring re-

instatement of the medical defense fund of the state association.

The scientific program was opened by Dr. W. A. MacMillan, of Charleston, who spoke on "Diagnosis of Intestinal Ruptures." He was followed by Dr. C. E. Holzer, of Gallipolis, Ohio, who talked on "Gallbladder Surgery." Dr. I. P. Champe, of Charleston, then gave an interesting talk on "Perforation of Gastric and Duodenal Ulcers in the Peritoneal Cavity," followed by Dr. Hugh Thompson, of Charleston, with a paper on "Treatment of Diabetes Mellitus."

Dr. G. G. Irwin, of Charleston, gave an interesting talk on the subject, "Some Remarks on Urology." He was followed by Dr. B. S. Rankin, of Kingwood, a member of the West Virginia legislature, who talked on "Medical Legislation." The program was concluded by Dr. A. S. Jones, of Huntington, who showed a number of slides and talked on "The Work Being Done for the Crippled Child in West Virginia."

Members present included Dr. C. W. Petty, of Hartford, president; Dr. H. A. Barbee, Dr. R. W. Sayre, Dr. E. L. McElfresh, Dr. U. G. Arnett, and Dr. J. N. Fadeley, of Point Pleasant. The visitors were Dr. MacMillan, Dr. Holzer, Dr. Otto A. Vornhold, and Dr. Milo Wilson, of Gallipolis; Dr. Irwin, Dr. Thompson, Dr. Champe, Dr. Rankin, Dr. Jones, and Mr. Joe W. Savage, of Charleston, executive secretary of the West Virginia State Medical Association.

H. A. BARBEE, Secretary.

Cabell County

Dr. F. D. Woodward, of the University of Virginia, was the scientific essayist at the regular March meeting of the Cabell County Medical Society, which was held in Huntington. Dr. Woodward presented a most interesting paper on the subject, "Foreign Bodies in the Air-Food Passages." The society is having fair attendance at all its meetings.

The Cabell county society is planning to revise its constitution and by-laws in the near future and to bring them up to date. Work on this has already been started. There seems to be considerable interest in the coming state meeting at White Sulphur on May 20–22, and a big delegation from Huntington and vicinity will be in attendance. The Cabell society is looking forward to having one of the best years in its history.

R. M. SLOAN, Secretary.

Lewis County

The Lewis County Medical Society met at the State Hospital at Weston on March 11, with the president, Dr. W. H. Greene, in charge. The essayist for this meeting was Dr. John E. Corkrean, of Jane Lew, who read an excellent paper on "Brain Injuries." The paper was very much enjoyed and was discussed freely by all members present.

The Lewis County Medical Society has already reported 18 members paid up and in good standing, which places the society in the 100 per cent column. In addition, four new members have been taken in this year. Only one member has moved out of the county during the past year.

O. L. HUDKINS, Secretary.

Parkersburg Academy

The medical society of Wood and surrounding counties met at the Elks' Club in Parkersburg at six-thirty o'clock on the evening of February 6, with Dr. B. O. Robinson, president, presiding. An excellent dinner was served and the entire evening until eleven o'clock was taken up. The only business disposed of at this time was the election of delegates to the state meeting at White Sulphur Springs on May 20–22, 1930. Dr. John T. Goff, Dr. T. L. Harris, Dr. R. H. Boice, and Dr. C. L. Muhleman were elected delegates, with Dr. C. E. Park, Dr. O. D. Barker, and Dr. Claud Grimm as alternates.

The scientific program was presented by members of the staff of the Wheeling Clinic. Dr. W. S. Fulton presented a paper on "Concerning the Irreducible Minimum of Surgical Mortality." He was followed by Dr. D. A. MacGregor, who presented a paper on "Post-Operative Pulmonary Complications." Th escientific program was concluded by Dr. R. H. Souder, who gave a paper on "Cardiac Problems in Management of Surgical Patients."

Discussion followed the reading of the last paper, and was interesting and general. Those taking part in the discussion were Drs. Miller, Park, Campbell, Lynch, Harris, and Cooper. Many other doctors extended thanks to the essayists, and all hoped to have Drs. Fulton, MacGregor, and Souder back again soon. The Academy felt greatly indebted to the Wheeling Clinic for such a splendid program.

The members present were: Drs. H. M. Campbell, C. E. Park, Z. B. Ferrell, W. A. Adams, A. M. Dearman, S. M. Prunty, C. E. Grimm, A. S. Grimm, H. E. Gaynor, B. B. Nickelson, S. H. D. Wise, E. L. Wright, O. J. Casto, H. H. Veon, R. W. Corbitt, R. E. Davis, T. L. Harris,

R. H. Boice, R. H. Wharton, R. S. Widemeyer, E. H. Douglas, J. G. Rogers, M. R. Stone, C. L. Muhleman, Roy Ben Miller, G. D. Jeffers, Paul Starkey, B. O. Robinson, H. A. Giltner, E. C. Hartman, and J. T. Goff.

Visitors were: Dr. W. S. Fulton, Dr. D. A. MacGregor, Dr. R. D. Gill, of Wheeling; Dr. R. H. Souder, Dr. Robert Lynch, of Wilmington, Delaware; Dr. W. A. Funk, of Parkersburg; Dr. Wayne Bronough, of Belpre, Ohio; Dr. William Cooper, of Parkersburg; Dr. C. A. S. Williams and Dr. M. M. LaBarr, of Marietta, Ohio.

J. T. Goff, Secretary.

Eastern Panhandle

One of the best meetings that the Eastern Panhandle Medical Society has ever held took place at the Thomas Jefferson hotel, Charles Town, on the evening of March 12, 1930. The attendance was 100%, with a number of visiting doctors also present. The secretary-treasurer reported the finances in a satisfactory condition and other items of business were transacted.

The scientific program consisted of a paper by Dr. George G. Snarr, of Winchester, Va., on the "Treatment of Diseases of the Eethmoidal and Maxillary Sinuses," and a paper by Dr. George O. Martin, of Martinsburg, on "Diagnosis and Treatment of Goiter." Discussion on Dr. Snarr's paper was opened by Dr. J. K. Guthrie. Dr. A. O. Albin opened the discussion on Dr. Martin's paper. The members present considered the two papers of unusual interest, and it was asked that copies be sent to the West Virginia State Medical Association in the hope that they might be thought worthy of publication in the Journal.

Dr. T. K. Oates, of Martinsburg, and Dr. W. Ross Cameron, of Martinsburg, were elected to represent the society as delegates to the state meeting at White Sulphur Springs in May. Dr. A. O. Albin was elected as alternate. All members of the Eastern Panhandle Society were urged to attend the state meeting, which will be held on May 20–22.

W. Ross Cameron, Secretary.

Barbour-Randolph-Tucker

The Barbour-Randolph-Tucker County Medical Society met at the Hotel Randolph, Elkins, on the evening of March 10, and a supper was served to the following members present: Drs. R. J. Condry, B. I. Golden, W. S. Michael, W. M. Whiteside, A. S. Bosworth, W. M. Junkin, O. L. Perry, E. M. Hamilton, C. H. Hall, and J. C. Irons. Dr. Condry, president, presided at this meeting.

The committee to report on the death of Dr. W. W. Golden made its report, which was adopted and a copy ordered sent to the family, to the Davis Memorial Hospital, to the West Virginia Medical Journal, to the Elkins newspapers, and to be spread upon the minutes of the meeting.

On motion, the society decided to meet in Elkins between May 7 and May 15, 1930, for the purpose of instructing the delegates to the state meeting at White Sulphur Springs on May 20–22. Dr. W. M. Junkin was admitted to the society on his transfer card from the Richmond, Virginia, Academy of Medicine. Dr. Junkin is with the Davis Memorial Hospital at Elkins.

The society passed resolutions suggesting changes in the new code under consideration by the state legislature, the changes relating to the sterilization of murderers and so-called "gunmen," and to the vaccination of children against smallpox.

The scientific program consisted of a symposium on diseases of the heart. Dr. E. M. Hamilton read a paper on "The Anatomy of the Heart." Dr. Condry, in discussing the paper, stated that it should ever be borne in mind that the conducting system of the heart, through some of the defects, is relieved to some extent by the compensational provisions of nature.

Dr. Whiteside read a very suggestive paper on "Diagnosis of Heart: Real or Imaginary?" In this paper it was stated that a large percentage of the diseases the physician is called upon to treat are simply functional and due to some other malady. These are often more alarming to the patient than the more serious organic diseases, and should not be neglected. This paper was discussed by Drs. Bosworth, Michaels, and Golden. Dr. Golden stressed the fact that these imaginary cases are most amenable to treatment and should not be lightly treated, because of the chance of losing the confidence of the patient. Dr. Irons called attention to the excessive use of coffee as a common cause of functional disturbances.

Dr. Condry read a compilation of most valuable extracts and statistics on "Diseases of the Heart."

On motion, it was ordered that for the next meeting there be two papers, one on "Toxicology" and one on "Legal Medicine." The meeting adjourned, to meet in the Hotel Randolph some time during the early part of May.

J. C. Irons, Secretary.

Kanawha County

Two interesting meetings of the Kanawha Medical Society were held during the month of March, the first on March 4 at the Daniel Boone hotel, Charleston, and the second on March 18 at the Association headquarters in the Public Library building, Charleston. About 100 members and guests were present at the first meeting, and approximately 50 members were present at the March 18 meeting.

Dr. James F. Mitchell, of Washington, was the principal speaker at the Daniel Boone hotel, first giving an illustrated lecture on "A Trip to the Far East," and later presenting a scientific essay on "The Conservative Treatment of Investions." Other speakers included Dr. Walter E. Vest, of Huntington, president of the West Virginia State Medical Association, and Mrs. O. L. Aultz, of Charleston, president of the Woman's Auxiliary. Dr. John W. Moore, of Charleston, presented a highly interesting paper at this meeting on "The Treatment of Diabetes," and Dr. Hugh Robins, Charleston city health commissioner, spoke on the recent typhoid fever epidemic.

Dr. Walter C. Swann, of Huntington, was the scientific essayist at the March 18 meeting, presenting an interesting paper on "Lipiodol Injections," illustrated with lantern slides. Mr. Charles Stevens, of Baltimore, was also on this program, presenting a motion picture on the preparation of biologicals. This film was made and presented through the courtesy of Parke-Davis and Company.

D. N. BARBER, Secretary.

PUBLIC HEALTH

Defective Vision in Children

Abnormal conditions of the eyes were found among 21 per cent of the kindergarten and nursery children examined in a four-year study of the vision of preschool-age children in New York City, recently completed by the National Society for the Prevention of Blindness. This is disclosed in the current issue of the society's *News Letter on Sight Conservation.*

Records were obtained from 21 kindergartens and nurseries in Brooklyn and Manhattan, with thirty nationalities represented. Of the 982 children inspected, 350 were recommended for routing to ophthalmologists and 232 actually received the examinations. Of these, 206 or approximately 21 per cent of the whole had some abnormal condition of the eye. The children were between the ages of three and six. There were 573 children from Manhattan and 409 from Brooklyn. Twelve ophthalmologists of Manhattan and Brooklyn gave freely of their services to the society in the study.

In making public the results of this study, Dr. B. Franklin Royer, medical director of the society, said:

"For a considerable period of time we have believed that if more attention is given to the detection and alleviation of eye defects in young children, especially in children of preschool age, the eye defects found at school age might be decreased and the vision in many instances might be definitely conserved. With this thought in mind, and with a determination to obtain enough statistical data for guidance, the study was started by examining the eyes of children of preschool age who were being given complete physical examinations at several settlement houses.

"It was felt that even for tentative conclusions the number of children examined should approach a thousand; otherwise the figures and curves might not accurately portray the trends and incidence of eye defects. For the purpose of determining the facts relative to the incidence of eye defects, it was felt that in securing data concerning 1,000 children a number of different nationalities should be included, so that our average findings might represent a pretty good cross-section of New York preschool children and might more closely represent the average American child.

"In testing the acuity of vision of a preschool child who is unable to read the letters of the alphabet, a special technique is used. The child plays a game in which the symbol *E* on the vision testing chart becomes a three-legged animal. The object of the game is to guess correctly which way the 'little animal's three legs' are pointing, as the position of the symbol is changed about."

Breeding Places of Malaria

The incidence of the genus of mosquitoes that carry malaria in the breeding places of a district situated at the eastern edge of the Yazoo-Mississippi delta is described in a report recently made public by the Public Health Service. The collections of four years are shown by month, species of this mosquito, and type of breeding place. The *Anopheles quadrimaculatus* is by far the most common species, and its larvæ may be found in almost every month of the year. This species shows much adaptability to various types of breeding places and may occur in large numbers in most of them.

Since it is the most important vector of malaria in the region above mentioned, any larvicidal operations would have to be directed against all types of breeding places of considerable area. Drainage may greatly reduce the available breeding places of this species of mosquito—the drainage canals would not afford a difficult problem; but such drainage is expensive and can hardly be undertaken except as a means of the reclamation of land. One other species of the malaria-bearing mosquito is common in this region and may be found in a considerable variety of breeding places. Two other species are comparatively rare.

The Care of Lepers

That leprosy now exists in the United States and has existed here for a great many years is a truism which seldom occurs to the average person until newspaper headlines attract attention of a community to some unfortunate person who is afflicted with the disease. Then, after a few days' hysterical attention to the subject, the question again drops into temporary oblivion.

In some of the states, leprosy has long been a problem of importance because of its presence in neighborhoods populated by descendants of certain of the earlier settlers and because of the fact that its propagation there is due to factors not well understood. For lack of better explanation, racial or family predisposition, local habits and customs, and the like, are ascribed as causes. In other states, particularly those with large seaports, cases of leprosy develop among immigrants who have been admitted with the disease in an early and undiagnosable form, and the disease has spread among the native population. A third source of infection is that found in our military and maritime population, in the soldier or seaman who has lived in an infected territory for a number of years, has contracted the disease, and has later returned to his native country.

Geographically, the Gulf Coast states are considered the most important foci of leprosy in continental United States, for here is recognized indisputable evidence of the continued propagation of leprosy, and here the disease has existed for generations, having been sustained by contact with leprous communities through commercial sources.

A conservative estimate of the prevalence of leprosy in continental United States places the number of cases at approximately 1,200. A reliable estimate of the number of lepers who have resided in the United States is well nigh impossible, and for many reasons. It is probable that, many times, leprosy has been confused with other diseases with which it has symptoms in common; furthermore, leprosy has not been consistently reported to health officials, and the public records must of necessity represent but a surface scratching. Then, too, in many instances, physicians have hesitated to report known cases of leprosy because of the unwarranted hysteria that would have been provoked by the report of the presence of a case of leprosy in a neighborhood where no suitable facilities existed for isolation and treatment, and where the leper had been permitted and encouraged to move on. Sometimes this method of dealing with lepers has been most humiliating to the leper and disgraceful to the community.

It was evident more than fifty years ago that some concerted action was necessary if the progress of leprosy in the United States was to be checked, and plans were formulated for having the federal government assume control of the situation. Constructive effort, however, did not crystallize until February 3, 1917, when Congress enacted legislation and provided funds for the establishment of a national home for lepers to be under the direction of the United States Public Health Service. The entrance of the United States into the World War prevented, for a time, active measures from being taken toward this project, although a committee was appointed to select a site for the proposed leper home. This committee met with great opposition in obtaining a site, because no state cared to cede territory to the government for use as a leper settlement, and the problem was finally solved by purchasing from the state of Louisiana the estate occupied by the Louisiana Leper Home.

This was developed by the U. S. Public Health service into the present National Leprosarium at Carvilla, La., where 306 lepers are now under treatment.

Crippled Children Branches

The organization of county branches of the West Virginia Society for Crippled Children, which was approved at a recent meeting of that body, will be started simultaneously with the membership campaign on May 1. Already four counties, Mingo, Roane, Tyler, and Wood, have organized local branches, and plans are now being made to organize every county in the state.

The purpose of the county branches is to arouse more interest in the work for the crippled children of the state by locating all needy cripples, holding

diagnostic clinics in coöperation with the Crippled Children's Council, and raising additional funds to supplement the state appropriation, which is not sufficient to meet the needs.

Malaria in the United States

In connection with field investigations relating to public health problems, the U. S. Public Health Service points out that malaria was once very prevalent in the northern United States. During the past fifty or sixty years it has greatly diminished and is no longer a serious problem there. In the southern states, malaria has also decreased; but in many localities the rate is still high and constitutes an important sanitary problem.

The liability of a serious increase of malaria in the north is not great so long as the present economic status of that region persists; in the south, the danger of a recrudescence of the disease is much greater, as the events of the past few years have demonstrated.

The factors concerned in the diminution of malaria in the United States are interdependent; their importance has varied with time and locality, but all have been closely related to the agricultural development of the country.

The study of the history of malaria in a country may afford useful information as to the best means of combating the disease. It is very desirable that such study be continued in this country, since, as the years pass, necessary data become more and more difficult to obtain.

CURRENT COMMENT

Doctors Join Faith Healing Clinic

In the course of the last five years repeated attempts have been made to interest the medical profession in West Virginia with the possibilities of mental and religious healing. It has never been with the idea of advancing the fact that such procedures greatly influenced straight pathology; but that the system might serve to alleviate other afflictions of mankind with which the physician was called upon to treat was very constantly maintained. From time to time, by various articles and other means, it was urged that the medical fraternity cease to take the whole thing with less deprecation and investigate its possibilities for what they were actually worth. Psychiatry was held as a very important scientific calling and more young men were urged to look into it as a specialty.

For some reason or other these efforts fell upon stony ground and the net results have been next to nothing. As a matter of fact, they engendered some criticism in various quarters as giving a good deal of space for what was apparently an idle piece of fallacy. That a certain cult actually achieved some prominence that should have long ago belonged to the medical profession was taken as one of the vagaries of the public mind, ever seeking something out of the ordinary. Nevertheless, every physician privately concedes the mind plays a considerable part in what is presented to him.

It will therefore come as a surprise and somewhat of a substantiation to observe the following news article, clipped from the March 2, 1930, issue of the New York *Tribune*:

"Plans for a demonstration center, where the clergy and medical profession will combine in the scientific and religious treatment of the sick, are nearing completion and are due to give New York the most extended experiment of its kind on record, it was learned yesterday.

"The work will be conducted under the joint auspices of the Academy of Medicine and the Federal Council of Churches, with distinguished physicians, clergymen and laymen supervising a form of healing that has so far been isolated and experimental.

"It has not yet been definitely settled where the center will be established, although Grace Church, which has had a successful 'prayer guild' for the last eleven years, has been mentioned as a possible site. A Pittsburgh clergyman who has had wide experience in the field of faith healing is being considered as the theological head of the demonstration center. Two other names have been put forward, however, and no invitation has yet been extended to any one of the nominees.

"For three years the Academy of Medicine, through its specially created committee on religion and health, has been exhibiting interest in various phases of faith healing and has been making an intensive survey of all data available on the subject. About two months ago plans began to take shape, and last Thursday the two committees of seven—one representing the Academy of Medicine and the other the Federal Council of Churches—met and discussed the possibilities of the demonstrations.

"Although the approach to the entire subject has been wary and well considered, because of the conflicting opinions in the churches on the efficacy of

faith healing and the skepticism of a certain percentage of the medical fraternity, the study has now reached a point where research will give way to action. Twenty-seven Protestant denominations are represented in the Federal Council of Churches, and field work is being done to get an accurate idea of the sentiment on linking faith healing to psychiatry in the church. The Brooklyn Federation of Churches is working locally on the survey, although it is understood that one center will serve the entire city.

"It is proposed that a study shall be made in the demonstration center, not only of the more specific treatment of disease by spiritual means, but of the therapeutic values of the various forms of worship—liturgy and hynody, the exercise of private devotions and the contemplation of religious symbols and architecture.

"The medical work will be in the hands of psychiatrists who have done special research on faith healing and are known authorities on the psychoses presumably susceptible to this form of treatment. The experiment will be conducted in a highly scientific and conservative fashion, it was learned, and will have little relation to the "laying on of hands" or the spectacular "cures" that have evoked skepticism in the past.

"Dr. E. H. Lewinski-Corwin, Dr. Frederick Peterson, Dr. Frankwood E. Williams, Dr. Robert L. Dickinson, and Dr. George H. Kirby are among the physicians who are serving on the Academy of Medicine committee now deliberating on the proposed plan.

"The members of the special committee of the department of research and education of the Federal Council of Churches delegated to the faith healing study are the Rev. Dr. John H. Lathrop, the Rev. Dr. Howard C. Robbins, Professor William Adams Brown, the Rev. Dr. Ralph W. Sockman, the Rev. Dr. W. Russell Bowie, Mrs. John Sherman Hoyt, and the Rev. Dr. Samuel McCrea Cavert.

"None of the committee members would discuss the proposed demonstration center yesterday, saying that their plans were embryonic. Dr. Cavert, who is general secretary of the Federal Council of Churches, said that the development of the project was a 'long and patient process.'

" 'In our opinion, the great significance is that physicians are interested in it,' said Dr. Cavert. 'There have been lots of experiments up to the present time, but not one which has had the definitely planned and sustained coöperation of the medical profession.

" 'In this instance the original initiative came from the Academy of Medicine. For that very reason we mustn't go off half-cocked or do anything which, from their standpoint, would be half-conceived or unscientific.' "

MEDICO-LEGAL

New Ruling in Malpractice Suits

Members of the medical profession in West Virginia will undoubtedly be interested in the recent decision of the state supreme court in the suit of Maud Howell *versus* Dr. J. F. Biggart, of Wyoming county. The case was thrown out of the circuit court of Wyoming county on motion of the defense. The plaintiff carried the case up on appeal and the supreme court remanded the case for trial, ruling that the Wyoming county circuit court erred in sustaining the motion of the defendant.

The case immediately attracted the attention of the West Virginia State Medical Association because of the point involved; *i.e.*, that lay testimony could establish the fact of malpractice. The plaintiff in the above case was the only person to testify that the treatment given her by Dr. Biggart was improper, and the trial court threw the case out because there was no expert testimony presented on this point. In overruling the lower court, the supreme court has established that lay testimony regarding the practice of medicine is sufficient to make a case for a jury to decide. The far-reaching effect of this ruling, if it is allowed to stand, can readily be seen.

The attorney for Dr. Biggart has already filed a petition for a rehearing before the supreme court, and the West Virginia State Medical Association, through its own attorney, has filed a brief in support of Dr. Biggart's petition. If the rehearing is granted the case will again be presented to the supreme court. The effect of the ruling is brought out forcibly in the brief filed in behalf of Dr. Biggart. It states, in part:

"The medical profession does not seek to protect the ignorant, unskillful or careless practitioner. It is of opinion that the skillful and careful practitioner is entitled to full protection against those who seek to take advantage of the uncertainties of the profession.

"The professions of law and medicine both are proverbially uncertain; but how much more uncertain is the profession of medicine. There exists no other science so encumbered with sources of error and difficulties as the science of medicine.

"Medicine deals with the investigation and the management of human life, which is the most complicated department of nature and also the most vague. It is necessary only to suggest a comparison of inanimate nature with the living human body. The endless variety found among individuals is one of the difficulties connected with medicine; so are the predisposing causes of disease in an almost infinite variety. Then there is the vast range of debilitating influences, such as improper nourishment, impure air, too much or too little heat or cold, addiction to alcohol or drugs, anger, fear, grief, etc.

"There may be a proclivity to disease caused by a previous disease, or actual diseases hidden in the body may predispose to other diseases; or there may be a hereditary tendency to disease. The temperament of a person complicates his treatment, and so does the sex, and so does the age; for what differences there are between infancy, puberty, the end of growth, and old age. These are the difficulties which confront the surgeon in the practice of surgery and those which confront the physician in the practice of medicine—the difficulty in tracing effects to their true causes, and causes down to their true effects.

Is it any wonder that, as one writer has said, 'It is in consideration of these peculiar difficulties that beset and encompass the business of the surgeon and physician that all enlightened courts have held that but ordinary care and skill shall be required of them, and that mere errors of judgment shall be overlooked, if the general character of treatment has been honest and intelligent; and that the result of the case shall not determine the amount of responsibility to which he is to be held. . . .'? (Elwell, 46.)

"It is believed that the effect of the decision in this case, if it is not modified, will be to change the law relating to malpractice heretofore existing in this state to a far greater extent than the court intended. Under it, the practice of medicine will be a most perilous calling. In the belief that the law should not subject doctors to such peril, the following argument is submitted:

FAILURE TO EFFECT A CURE DOES NOT, ALONE, ESTABLISH, OR RAISE A PRESUMPTION OF, WANT OF SKILL OR NEGLIGENCE:

"This has long been recognized as the law in West Virginia. The rule is sometimes expressed as follows:

> " 'Proof of a bad result or of a mishap is of itself no evidence of negligence or lack of skill. . . . The jury can not draw the conclusion of unskillfulness from proof of what the result of the treatment was, but that the treatment was improper must be shown by evidence.' *Sims* v. *Parker*, 41 Ill. App. 284.

"How shall this proposition be applied to the facts of this case? It is submitted that the only evidence of want of skill or negligent treatment on the part of Dr. Biggart that has been introduced by Mrs. Howell is the bad result.

"There is no evidence as to what Mrs. Howell's illness was when she first went to see Dr. Biggart; no evidence as to the history she gave him; no evidence as to what medicines Dr. Biggart gave her; no evidence as to how much medicine he gave her; no evidence that the treatment Dr. Biggart gave her was not such as would ordinarily be given her by the average of the members of the medical profession in good standing at Mullens or in similar localities and in the same general line of practice, regard being had to the state of medical science at the time. There is no evidence except the failure to cure—the bad result.

"It seems incredible that it is the intention of the court to disaffirm this well-established rule, and to hold that in the future, in West Virginia, a plaintiff need only show that he was treated by a doctor and that the doctor failed to cure him in order to make a case. If that is the intention, the calling of a doctor in West Virginia will be, indeed, a perilous one.

"Why should it be taken as established that the medicine administered to Mrs. Howell by Dr. Biggart produced her condition simply because there is no denial of plaintiff's evidence? How can this court say her condition was not produced by the illness from which she was suffering when she first went to see Dr. Biggart, despite all he could do to prevent it? How can the court say her condition was not produced by an infection from some other source? How can it be established that her condition was produced by the medicines Dr. Biggart administered, except by the testimony of one familiar with those medicines and the effect they have upon the human system? And the burden was certainly upon the plaintiff to introduce that testimony. How can the court say that Dr. Biggart was not guilty merely of an error of judgment, for which the courts are unanimous in holding a doctor is not liable?

"It is earnestly submitted that this burden should not be imposed upon the medical profession in West

Virginia. The hitherto well-settled rule is a just and fair one and should not be overruled, for the standards by which the practice of medicine is to be judged should be laid down by those familiar with it, and not by laymen ignorant of it. Those portions of the opinion which are inconsistent with the proposition that failure to effect a cure does not, alone, establish, or raise a presumption of, want of skill or negligence, should be modified.

"It is a sound proposition for only persons possessing sufficient knowledge and skill to give their testimony probative value should be qualified to say whether what a doctor has done is right or wrong.

"The record shows that at least two of the three other doctors who treated Mrs. Howell were in the court room during the trial, and is it not significant that they were not questioned by the plaintiff's attorney on any of these matters as to which their education and training peculiarly qualified them?

"In conclusion, we wish to repeat that it is not sought to obtain an advantage for the medical profession in the matter of liability for the results of ignorance or carelessness. It is sought to preserve the protection which the laws of this state have hitherto afforded that profession.

"The decision in this case overrules the two long-established principles of law in this state upon which the protection of doctors against unjust suits for negligence is founded, and it is most sincerely urged that a rehearing of this case should be granted by the court."

FROM OTHER JOURNALS

Descartes Was Right

(From *The Bulletin of the Academy of Medicine of Cleveland.*)

Give more than a casual glance at the monthly brochure which comes to you as the American Medical Association Bulletin. In the December issue an article by Dr. Harry M. Hall, of Wheeling, W. Va., is a powerful antidote for the torpor borne of smug complacency. Although the theme is one of a "whither-are-we-drifting" nature, it carries no undertone of whining helplessness or hopelessness. He discusses thorny subjects in forceful and scholarly fashion. The garbling of ethical standards, the pitfalls of paternalization of medicine by wealth and industry, the bogie of high cost of medical care, the increasing complexity of medicine and the need of leadership and loyalty—all these problems are analyzed with a stark courage which inspires and an iconoclastic force which invites criticism.

"To have given some of the views of this recital," Dr. Hall writes, "has cost me some grief and sorrow. We must always be courageous enough to examine ourselves as we are frank about confessing our errors in the performance of our duties."

Read this paper. It resounds with the intense clairvoyancy of Descartes when he said: "If ever the human race is lifted to its highest practicable level, intellectually, morally, and physically, the medical profession will perform that service." L. J. K.

Family Needs and Necessity Costs

"How is it that the husbands of today fail to supply the funds with which to buy the articles needed by the family?" asks Agnes L. Peterson, assistant director of the Woman's Bureau, U. S. Department of Labor, in a recent summary of working conditions among the thousands of women employees of the country.

She sets forth her answer to this important question in the following paragraph:

"High standards and changes in our manner of living, with the accompanying increase in the cost of living, without commensurate increases in men's wages, and depreciation of the dollar are perhaps the most obvious explanations of the inadequacy of many men's wages to give their families even the barest essentials. . . . There is evidence that in many industries the men's earnings are inadequate to maintain their families on a reasonable health and decency level."

The explanation is quite interesting, as also is the recent statement issued by the U. S. Commissioner of Labor Statistics, showing that the average cost of living in December, 1929, was 71.4 per cent higher than the average for 1913.

It is quite likely that the answer to many of the questions asked regarding the so-called problem of cost of medical care may be found in studies similar to these. Perhaps some of the captains of commerce and industry who are contributing funds to enterprises designed to socialize medical service would find the answer to some of the public's tribulations through careful perusal of the too moderate payrolls of the businesses which have made them financially independent, giving them the time and means to engage in philanthropic pursuits. It is futile to try to reach conclusions about the problem of distribution and cost of medical service until the intricate economic and social factors relating directly or indirectly to it and all other necessities of life have been

dug out, dusted off and digested.—*The Ohio State Medical Journal.*

Parrot Fever

For a period of ten days recently the newspapers carried accounts of the introduction into the United States and England of a disease which is believed to be transmitted to humans by newly imported parrots from tropical countries. No small amount of concern was caused by these announcements. Immediately there was a desire on the part of the public and physicians alike for more information concerning this disease. Bird fanciers were equally interested.

There have been very few contributions to the literature concerning this malady, but those which have been made indicate that it has long been recognized in tropical countries and some few cases have been reported in the North Temperate Zones. It has been given the name of *psittacosis.* From the symptoms which have been described, it resembles septicemia of typhoid fever complicated by unusual signs in the lungs suggestive of influenza-pneumonia. The duration of the fever which accompanies it varies from fifteen to twenty days, and the total mortality is said to be extremely high, ranging from 40 to 50 per cent and even higher in elderly people. The infecting organism has been described.

The United States Public Health Service is at the present time investigating this outbreak, and, on an executive order by President Hoover, an embargo has been placed on the importation of parrots into the United States. It is quite probable that this step will prevent further spread of the disease and will be all that is necessary to completely eradicate it in the North Temperate Zone. In any event, the whole episode will notably decrease the popularity of these loquacious birds and contribute in a small way towards abating excessive noise which we discussed in these columns last month. In addition, it will make available a large number of crackers for more useful purposes.—*International Medical Digest.*

The New Pharmacopœia

Considerable discussion was occasioned after the completion of the last Pharmacopœia as to the advisability of deleting as many drugs as were cut out by the ninth decennial revision. In order to answer the question of the frequency with which certain drugs are used which are not now listed in the Pharmacopœia, but not to determine the pharmacologic action of these preparations, the chairman of the Committee on Revision announces that a questionnaire has been prepared containing a list of the large number of drugs omitted from U. S. P. VIII and IX. Physicians who are interested in seeing that drugs which they consider of value or that certain preparations of drugs be incorporated in the Pharmacopœia are requested to write to E. Fullerton Cook, chairman of the Committee on Revision, at 636 South Franklin Square, Philadelphia, Pa. The questionnaire will be sent to those physicians who would like to have additions or changes made to the Pharmacopœia, the only proviso being that, if the questionnaire is filled out, each and every omitted article, making up roughly a total of some three hundred and fifty drugs or pharmaceutical preparations, be marked either as being used "often" or "rarely" or "never" by the physician signing the slip.

This investigation of the Pharmacopœia Committee seems eminently fair and just. Certainly the average practitioner of medicine should be given the opportunity of expressing his opinion, if he cares to, concerning the availability of the deleted drugs as a whole or of any drug which he feels has unjustly been removed from this, the official, book of standards for drugs.—*The New Orleans Medical and Surgical Journal.*

Pernicious Charity

In his inaugural address before the Chicago Medical Society, June, 1929, Dr. Charles B. Reed said:

"The practice of charity is one of the most ancient and glorious traditions of the medical profession, and only recently the Chicago Medical Society reaffirmed and published in its official transactions the ethical ideal that it is ready and willing at all times to serve the citizens of Cook county irrespective of their economic status. The profession feels, however, that only too frequently its desire to serve the public is misunderstood or taken advantage of by the unworthy. *That charity is pernicious which takes from independence its proper pride and from mendicity its proper shame.* The abuse of charity leads for the physician to pauperization of the body and for the patient to the even more serious pauperization of the soul. In both cases civic pride is abolished by the personal degradation. The abuse of charity arouses the indignation of the physician because every such case prevents the extension of legitimate aid to a worthy object. This state of affairs is liable to continue, however, until society learns that the successful distribution of medical charity is a specialization which can only be accomplished through the exercise of the principle that MEDICAL MATTERS MUST BE MANAGED BY MEDICAL MEN."—*Illinois Medical Journal.*

The Radio and Medical Frauds

About 18 months ago, a widely advertised health institution in the western part of Missouri which could not be endorsed by the medical profession attempted to advertise by broadcasting over a St. Louis broadcasting station. Acting on the advice of the Missouri State Medical Association, the broadcasting station investigated the institution through the Better Business Bureau, found its statements unsound, and refused to accept a contract. This culminated in the agreement of all radio stations, broadcasting locally in St. Louis, to confer with the Better Business Bureau on medical concerns attempting to advertise over the radio. This was the first agreement of this kind in the country, according to the Better Business Bureau of St. Louis.

In many parts of the country this problem has not been so easily dealt with. On December 26, 1929, Dr. Shirley W. Wynne, commissioner of health in New York City, protested to the Federal Radio Commission and asked that agency's assistance in meeting this problem. Dr. Wynne was informed that the commission is powerless at the present time except when specific complaints and *verbatim* reports of the broadcast are filed and the charges prosecuted before the radio commission.

Dr. Charles A. Neal, director of the Ohio State Department of Health, in endorsing Dr. Wynne's action, said: "While time has not permitted the tabulation of the amount of harm due to advertising by air by the quack doctors and pseudoscientists, the ill effects of this manner of advertising each day become more apparent to public health authorities."

Propaganda disseminated through broadcasting by medical quacks and unscrupulous commercial health concerns are listed as including worthless patent medicines, alleged remedies and so-called scientific treatment methods and institutions.

Dr. Wynne followed a somewhat similar plan to the one in St. Louis and appealed to the broadcasting station. This procedure was the consensus of a conference of broadcasters, medical authorities, and business groups, held early in January. The situation in New York has to some extent been cleared by an agreement based on the code of ethics of the National Association of Broadcasters. It reads, in part:

"Recognizing that the radio audience includes persons of all ages and all types of political, social and religious beliefs, every broadcaster will endeavor to prevent the broadcasting of any matter which would commonly be regarded as offensive.

"When the facilities of a broadcaster are used by others than the owner, the broadcaster shall ascertain the financial responsibility and character of such client, that no dishonest, fraudulent or dangerous person, firm, or organization may gain access to the radio audience.

"Matter which is barred from the mails as fraudulent, deceptive or obscene shall not be broadcast.

"Every broadcaster shall exercise great caution in accepting any advertising matter regarding products or services which may be injurious to health.

"No broadcaster shall permit the broadcasting of advertising statements or claims which he knows or believes to be false, deceptive or grossly exaggerated."

The Kansas City Better Business Bureau is now coöperating with local stations in supplying information to prevent misleading statements and claims over the radio. The movement is spreading and is gradually taking the form of a general agreement between broadcasting stations and Better Business Bureaus.—*The Journal of the Missouri State Medical Association.*

Is State Medicine Coming?

Glenn Frank, president of the University of Wisconsin, in the *Chicago Daily News*, November 14, 1929, says:

Recently I had the privilege of discussing, before some 3,000 members of the American College of Surgeons, the threat of state medicine or its equivalent in the corporate medical activities of industries, insurance companies, and the like.

I tried to face, with complete candor, the powerful private economic interests that are driving industries and insurance companies and the increasingly enlightened leadership of labor to wage organized warfare upon the staggering economic loss they must bear from preventable disease and postponable death.

It is undoubtedly true that all of the necessary raw materials for a vast system of state medicine or its equivalent are today lying about us.

Will these raw materials be used to build a system of state medicine or will the medical profession display enough statesmanship to take the leadership in meeting the needs that will otherwise force state medicine?

Here is a question that calls for sincere and sustained thinking by doctors everywhere.

As a general principle, I dislike to see any activity fall into the hands of the government—whether it be an activity of business or labor or agriculture or

the professions—if such activity can be administered equally well or better by the trade or profession to which the activity logically belongs.

Society forever faces the dilemma of choice between an inner and an outer control of its fundamental services.

I prefer inner control, not because I am a reactionary who grows hydrophobic at the mere suggestion of government control, for I have rarely been accused of that, but because, as society becomes increasingly complex and technical, the man on the job should be better equipped for the job than the man on the sidelines. It is, I think, an intelligently progressive policy to say that we shall consider government control of any given fundamental service only when inner control breaks down.

State medicine will not come, in my judgment, if doctors generally display in the years ahead adequate sensitiveness to social values and adequate statesmanship in meeting social needs which, in matters of disease and death, now present such a serious problem to individual workers, to industries, to insurance companies and the like.

The doctors must excel industries, insurance companies and governments in their zeal for preventive medicine; they must humanize the science of the study of disease, linking the learning of the laboratory ever more closely to the life of mankind.

President Frank's address is published in full in *Surgery, Gynecology and Obstetrics*, January, 1930. —*Illinois Medical Journal.*

Income of Physicians

From time to time the question is raised as to what effect the extensive program of preventive medicine that is developing in many parts of the country will have on the income of the practicing physicians.

The falling death and morbidity rates in all parts of the country compel recognition of the fact that this question has other than academic significance. Thinking persons realize that the practice of medicine is no more a static condition than any other human relationship. In the evolution of social adjustments, the means and mechanism of furnishing necessary human service must be modified to meet changing conditions.

The shrewd horse-trader long ago sold his livery stable and bought a garage. The physicians of the kerosene era obtained a large part of their income from the treatment of diphtheria and infantile diarrhea. While preventive medicine has reduced the physician's income from both these sources almost to the vanishing point, the physician of the gasoline age has more practice of a far better kind.

The mathematical demonstration of this statement may be presented with available figures. The last year for which figures on diphtheria rates of the various states of this country are obtainable is 1927. In that year there were 82 cases of diphtheria reported in the state of Michigan for each 100,000 population. A comparison of incomes to the physicians between fees received for the treatment of cases and those paid for the immunization of babies reveals that, even where the disease has the above unusual prevalence, preventive medicine is as productive financially as curative medicine. The income from treating 82 cases at $50 each would be $4,100. Among each 100,000 population in the state of Michigan, in 1927, there were 2,200 babies born. If each of these babies had been immunized at only $3 each, the income from this practice in 100,000 population would have been $6,600.

It is also to be noted that these data predicate only the immunization of the newborn, or an equivalent number of persons in the community. There are, of course, four times as many preschool children as babies, and ten times as many school children. The opportunity for increasing practice by carrying on immunization among the preschool and school populations in the physician's clientèle offers an almost unlimited field.—*Wisconsin Medical Journal.*

HOSPITAL NEWS

Hospital Association Appointments

Mr. J. S. Turk, of Wheeling, president of the Hospital Association of West Virginia, has recently announced his new committee appointments for the present year. Mr. Turk has given considerable thought to the various hospital committees, and his selections were made as follows:

Committee on Legislation: Dr. W. A. MacMillan, Charleston, chairman; Dr. C. A. Ray, Charleston; Dr. W. E. Vest, Huntington, and Dr. B. S. Rankin, Kingwood.

Committee on Nurses: Miss May M. Maloney, Fairmont, chairman; Miss Vesta V. Reid, Huntington; Dr. C. M. Scott, Bluefield, and Dr. H. M. Hall, Wheeling.

Committee on Constitution and By-Laws: Dr. Walter E. Vest, Huntington, chairman; Sister M. Evarista, Charleston; Dr. B. I. Golden, Elkins, and Dr. J. E. Wilson, Clarksburg.

Auditing Committee: Dr. R. A. Ireland, Charleston, chairman; Sister M. De Sales, Clarksburg, and Dr. R. H. Dunn, South Charleston.

Committee on Membership: Dr. Walter E. Vest, Huntington, chairman; Miss May M. Maloney, Fairmont; Sister M. Xavier, Wheeling; Dr. B. I. Golden, Elkins, and Dr. W. A. MacMillan, Charleston.

Privileged Communications

From at least the time of the Middle Ages certain communications have been held privileged, and the breaking of secrecy has always been considered as, at the least, a gross breach of ethics; often as a crime. These privileged communications have been those of the parishioner to his priest, of the client to his lawyer, and of the patient to his physician.

The propriety of this secrecy is obvious. The physician, the lawyer and the priest are responsible for the physical, the temporal and the spiritual welfare of mankind. In order for them to perform their proper functions, it is essential that they have a thorough knowledge of all relevant facts in the case; not merely of some of them. They must possess in the fullest possible degree the confidence of their clientèle. How else can they acquire the facts? No seeker for help is going to be completely disingenuous or tell his story without reservation, unless he is convinced of the absolute secrecy of his communication. Consequently, various customs and legal enactments have arisen, making more definite the penalties for divulgence.

The seal of secrecy imposed upon the doctor in regard to communications from his patient, necessary to a full understanding and proper treatment of his case, is a positive duty imposed by custom and by legal enactment to prevent the dissemination of any information so gained.

It is a matter of common knowledge that few things are as potent to ruin a physician as the suspicion that he talks about his patients.

Moreover, the law, which is codified custom, backs up popular feeling. It feels so strongly that it is against public policy to loosen this bond of secrecy that it definitely forbids divulgence of knowledge so gained. The legislature of Pennsylvania formulates the custom in an act passed in 1907, amending a former act as follows:

"Be it enacted, etc.: That no person authorized to practice physics or surgery shall be allowed, in any civil case, to disclose any information which he acquired in attending the patient in a professional capacity, and which was necessary to enable him to act in that capacity, which shall tend to blacken the character of the patient, without consent of said patient, except in civil cases brought by such patient for damages on account of personal injuries."

Obviously, the hospital is a physician within the meaning of this law; and no employee of the hospital is allowed to do what is forbidden to a physician.

However, I am not here to discuss the legal aspect of the matter. All I can say is that the law respects the secrecy of communication between patient and physician, and refuses to allow these communications to be divulged in court except in very special circumstances.

Attempts which have been made for some time, with greater and greater success and brazenness, to circumvent this salutary provision of law have finally become intolerable.

Certain less reputable insurance companies have come to take the position that hospital and physician's records—which at law are privileged—belong in some way to the companies; or at least that they should have full rights to inspect these records at any time; also that they have a right to require the hospital to check up on the information given by the patient in his application for insurance.

The position is understandable, though not excusable. The insurance company is a money-making institution. Its prime function is to pay dividends to its owners, the stockholders. Notwithstanding any vague or unofficial statements the company may make to its prospects, it has no special duties toward its insured. The company will do—and should do—nothing voluntarily which will increase its expenses. It will quite properly fight and refuse payment of any claim that does not come within the strict letter of its contract. It construes every contract strictly, and always in its own favor. That such a strict construction may in many cases work hardships on individuals is of no consequence. A claim manager who allowed his sympathies to sway an impartial business judgment would be subject to reproof from his superiors. In all this there is nothing wrong. The only purpose of the company writing insurance is to make money; and "a penny saved is a penny earned."

However, the efforts of these companies to save money, commendable in itself, has been carried too far. They have attempted to use hospitals and their employees, and through hospitals to get for their own use the privileged statements they can get in no other way, and which may allow them to save still

more money in disputing claims or in voiding insurance in force.

The contract of insurance is a contract between the insured and the insurance company. No other person is mentioned in particular; no special physician or hospital is mentioned. The hospital has no obligation to the company, *nor to any one else except the patient.*

The companies choose their risks carefully. They ask searching questions; they require a careful and thorough physical examination, and they impose as penalty for any evasion the cancellation of the insurance. Then when the insured enters the hospital they demand as a right that the employee of the hospital assist them in certifying as to identity in the search for possible evasions or untruths in the application for insurance, or for other facts by means of which they might evade the payment of claims.

In all this you not only have no interest, but your duties lie toward the patients of the hospital. You are not employed—or should not be—by any insurance company. Whether or no the company makes money does not concern you in any way. The company could easily employ the additional investigators or clerical help necessary to do for themselves what your good nature now impels you to do for them. You know to what extent the demands of insurance companies have finally come—questionnaires, often in duplicate, even triplicate, of 20 to 30 questions to be filled in "in own handwriting"; requests to know how many other blanks have been filled in for other companies in the same case; whether tuberculosis, syphilis, cancer, alcoholism, or other conditions were present—even data to confirm identity—with sometimes a request that blanks be signed before a notary "before being accepted."

Anything to establish identity of the patient should obviously be filled in by the company's own investigators at first hand. The hospital's information can never be closer than second-hand as regards many of the details. Moreover, some of the questions are entirely improper for the company to ask, and wrong—perhaps criminally wrong—for the hospital to answer.

Of course, this is an old story to record librarians, who know better than any one else the great amount of free work some insurance companies demand if they can. But there is another side, often lost sight of, which is our *obligation to our patients.* And no distinction can be made, as has been attempted, between ward and private patients. In fact, if any distinction is made it should be in favor of the wards, as being more likely to be filled with the poor, the feeble and the unintelligent and the friendless than the private rooms. The private patient, much more than the ward patient, is in a position to protect and defend his own interests.—T. McKEAN DOWNES, M.D., in *Hospital Management.*

GENERAL NEWS

The White Sulphur Meeting

The scientific program for the sixty-third annual meeting of the West Virginia State Medical Association, to be held at White Sulphur Springs on May 20–22, 1930, has been practically completed and will be announced in full in the May issue of the JOURNAL. The present arrangement calls for the opening of the convention at 9:30 o'clock on the morning of May 20. Sessions will be held during the morning and afternoon. On the evening of May 20, Dr. M. Y. Dabney, of Birmingham, Alabama, will deliver a semi-scientific talk, the meeting to be thrown open to the lay public.

Following the general program on the morning of May 21, the three sectional meetings will be held. The sectional meetings are expected to adjourn at about five o'clock that afternoon and the annual banquet and dance will be held that evening. Dr. R. F. Lischer, of Mascoutah, Illinois, will be the only banquet speaker and will deliver his philosophical address on "A Pen Picture of the Country Doctor."

Dr. George H. Bigelow, state health commissioner of Massachusetts, will be the essayist on the last morning of the convention, May 22. Following his address on "Private Practice and Public Health," the election of officers will take place. The election is the last thing on the last day of the meeting and the convention will adjourn immediately thereafter. Heretofore, the election has been held prior to the scientific program on the last morning of the meeting, but the change was made this year in accord with the sentiment manifested at the Martinsburg meeting in 1929.

Among the out-of-state men who have accepted invitations to appear on the White Sulphur program are: Dr. Walter M. Simpson and Dr. E. R. Arn, of Dayton, Ohio; Dr. Carl A. Hedblom, of Chicago; Dr. Charles McCuskey, of Rochester, Minnesota; Dr. James H. Smith, of Richmond, Virginia; Dr. Gabriel Tucker, of Philadelphia; Dr. J. Morrissette Smith, of New York City, and Dr. W. R. Whitman, of Roanoke, Virginia. A number of

state men have also been scheduled for the general program and for the sectional meetings. They will be announced in the May issue of the JOURNAL, which will be the official convention number.

Special convention rates for the White Sulphur meeting have been secured from the Greenbrier Hotel there, the rates ranging from $8 per day to $12 per day. The Greenbrier is operated on the American plan, and the rates quoted by the hotel include both rooms and meals. A complete schedule of the rates will be found elsewhere in this issue of the JOURNAL. Those desiring to make reservations ahead of time should communicate with Mr. George O'Brien, assistant manager, Greenbrier Hotel, White Sulphur Springs, W. Va. In connection with the rates quoted above, it might be said that the rates apply two days prior to the opening of the meeting and two days after the close for any members who desire to arrive ahead or remain after the convention closes.

The Greenbrier will be practically turned over to the members of the Association during the meeting there, and the hotel will house the entire convention, including exhibits and sectional meetings. Interest over the state in the coming meeting is being manifested on all sides, and the White Sulphur gathering is expected to be one of the largest in the Association's history.

Convention Rates

Special convention rates for the sixty-third annual meeting of the West Virginia State Medical Association, to be held at White Sulphur Springs on May 20–22, 1930, have been secured from the Greenbrier Hotel there. These rates range from $8 per day to $12 per day, including both rooms and meals. The following is the complete schedule of rates as announced by the Greenbrier management:

Single room without bath	$ 8.00 per day
Double and single room with connecting bath	9.00 per day
Two single rooms, connecting bath	10.00 per day
Double room with bath, twin beds	10.00 per day
Single room with private bath	12.00 per day

All of the rates quoted above are for each person or each occupant of a room. For instance, the rate for a double room with bath is $10 per day for each person occupying the double room.

In addition to the above rates, there will be a charge for the banquet on the evening of May 21 of $1 per person for all persons registered at the hotel. The banquet charge will be $3 per person for those who are not registered at the hotel and who come for the banquet alone. The room rates will apply for two days prior to the opening of the meeting and for two days after the close of the meeting for any members who desire to arrive ahead of time or remain after the convention closes.

Fidelity Investment Resources

The JOURNAL is pleased to call attention to the full-page financial statement of the Fidelity Investment Association which appears in the advertising section of this issue. This insertion was placed with, and accepted by, the JOURNAL because of the many West Virginia doctors interested in the Fidelity company. This company has released the following announcement in connection with their advertising insertion:

"The Fidelity Investment Association, an institution devoted exclusively to the sale of annuities, reports an increase in resources of $3,066,249 in 1929 over 1928. Total resources of $20,151,567 as of December 31, 1929, compared with $17,085,318 at the close of 1928. There was also an increase of $15,768,000 in the amount of annuities placed in 1929 over 1928, of which $3,852,000 represented the gain in the last quarter of 1929. This is regarded as significant in view of the stock-market declines of October and November.

" 'The year just closed,' says the report by President D. A. Burt, 'was the most successful in our history of more than eighteen years, not alone from the standpoint of growth in assets and volume of new business, but also from the standpoint of sound, constructive effort. The association established a new high record for all time by placing in excess of $1,000,000 new annuity business on its books in one day. And during the recent stock-market crash Fidelity was found serving smoothly and efficiently thousands of contract-holders who had applied for loans of more than $1,000,000.'

"The association maintains branch offices in many cities of the country. The Charleston district is managed by Mr. William S. Bolden, of Charleston, who took charge of the district in July, 1929, and has shown a very substantial gain in Fidelity annuity contracts for the southern part of West Virginia.

"The month of February just past was an outstanding month with the Fidelity Investment Association and particularly so with the organization in West Virginia, $674,000,000 in annuities having been sold in West Virginia during that month. Latest reports from the home office show resources now in excess of $21,000,000.

Golden Memorial Heart Clinic

Dedication of the Golden Memorial Heart Clinic was held at the Davis Memorial Hospital, Elkins, on March 14, 1930. The dedication program opened at eight-thirty o'clock on the morning of March 14 with a demonstration of spinal anesthesia in major surgery. At ten o'clock that morning there was held laboratory demonstrations and their application to general medicine. The afternoon was devoted to demonstration, case exhibits, röntgenological and cardiographic exhibits, motion pictures and lantern slides, and general discussion of cardiac conditions.

At 6:15 o'clock that evening a dinner was given to the guests attending the clinic by the Davis Memorial Hospital. An address with motion pictures, on the subject, "The Heart in General Practice," was given by Dr. Joseph B. Wolfe, lecturer on cardiovascular diseases at Temple University School of Medicine, Philadelphia. This was a most excellent paper and contained much of high value to the men in general practice. Dr. Wolfe also took part in the discussions during the afternoon program.

Dr. Borman Leaving

Dr. M. C. Borman, of Montgomery, president of the Fayette County Medical Society, is leaving West Virginia on or about the first of April, 1930, and will locate in Milwaukee, Wisconsin. Dr. Borman has served two terms as head of the Fayette society and has given a great deal of his time and energy in furthering the interests of organized medicine in his section of the state. With Dr. H. A. Walkup, secretary of the Fayette County Medical Society, Dr. Borman has seen an increase of approximately 25 per cent in the society membership. In 1929 the Fayette County Medical Society was the first and one of the largest societies in the state to report its membership in 100 per cent good standing.

Dr. Walkup, of Mount Hope, secretary of the Fayette County Medical Society, has been in ill health for the past two months, and at the present time is confined to the Coal Valley Hospital in Montgomery. Although his condition is improving nicely, Dr. Walkup decided to give up his office in the society and his resignation was recently accepted with much regret, along with the resignation of Dr. Borman.

In spite of the handicap imposed on Fayette county by the loss of its president and secretary, the society has been placed in good hands and another successful year in its management is assured. Dr. R. P. Woods, of Oak Hill, has been selected to serve as president for the remainder of the year, with Dr. C. W. Stallard, of Montgomery, as secretary. Dr. Woods and Dr. Stallard have already taken over the duties of their respective offices.

Gorgas Awards Made

J. Ross Hunter, Jr., son of Dr. J. Ross Hunter, of Charleston, has recently been named as the West Virginia contest winner of the second annual Gorgas Memorial essay contest. He is a student in the Charleston high school and has received a Gorgas medal for his essay, and his paper is eligible and will be entered for the national prizes. There were 42 state prizes awarded throughout the United States.

The contest is conducted under the direction of the Gorgas Memorial Institution of Tropical and Preventive Medicine. The topic this year is "The Gorgas Memorial: Its Relation to Personal Health and the Periodic Health Examination." The winning papers deal with various phases of health work conducted by the Gorgas Memorial Institute, including the research laboratory in Panama, mosquito control campaigns in the United States, and a wide program of health education which stresses better personal health and the annual health audit.

A total of 4,741 essays were entered from the entire United States and there were 42 prizes awarded for the best essay written in each of the 42 states. A total of 262 students received Gorgas medals for writing the best essays in their respective schools.

In Memory of Dr. Golden

The following resolution, commemorating the death of Dr. W. W. Golden, of Elkins, last October, was presented and passed by the Barbour-Randolph-Tucker Medical Society at its March 10 meeting. The committee appointed to draw up the resolution reported as follows:

To the Barbour-Randolph-Tucker County Medical Society:

Your committee begs to submit this report:

In the death of Dr. W. W. Golden, which occurred on the 14th day of October, 1929, this society has lost one of its most active, valuable and respected members; the city and state a most useful citizen; the State Medical Association one of its most prominent workers, Dr. Golden having filled efficiently the offices of state secretary and president.

It was due to his zeal and influence that the Barbour-Randolph-Tucker County Medical Society

was organized in 1908. He was one of its most faithful members. He seldom failed to read an instructive paper or make a talk when called upon, although he was generally a very busy man. He early felt the need of medical organization, realizing its value in promoting medical ethics, increasing efficiency and engendering a better fraternal spirit.

Dr. Golden was most loyal to his friends and liberal in dispensing kindness to them and in giving wholesome advice when needed and sought for.

As we look back and see him coming amongst us, as he did, with national and racial antipathies to overcome, a new language to acquire, a different environment to meet, we realize how masterfully he surmounted all obstacles until he rose to the front rank in his chosen profession, and we are struck with amazement.

His services as superintendent of the Davis Memorial Hospital, for more than twenty-five years, were marked by his efficiency in bringing the hospital to a standing among the highest in the state.

This society greatly deplores his sudden death, at the post of duty, at the acme of his usefulness, and we hope that his achievements in spite of the many difficulties may ever be an inspiration for us all to strive for the better, the larger and the higher things of life.

(*Signed*) J. C. IRONS.
W. E. WHITESIDE.
O. L. PERRY.

Soldiers of Peace

A column known as "Left-Hand Turns," by W. A. J., appears daily in the *Wheeling Intelligencer* of Wheeling, West Virginia. The following comment on the profession of medicine, which appeared last January 20, should be of interest:

"It is not probable that the following names will mean much more to you than they did to me: Roswell Waldo, W. C. W. Glazier, J. F. Groenwelt, W. R. McAdam, W. M. Wightman, T. F. Richardson, W. W. Miller, T. B. McClintic, W. E. Gettinger, G. H. Cowan, L. A. Keree, Harry Anderson. They were members of the Health Service of the United States, and in the wars against yellow fever, typhoid, Rocky Mountain spotted fever and parrot fever, while 'in line of duty,' exposed themselves and died, martyrs to science; died that others might live. Deliberately, consciuos of the danger, they laid themselves upon the altar of their country. To most of us they are 'unknown soldiers of peace.'

"While their names are written in letters of gold in the official records, no monuments have been erected to their memories. No medals have been awarded, no annuities bestowed. Probably they would not have wanted them. They nobly did and bravely died and were content.

"In every community we have these fearless soldiers of peace—the doctor, the trained nurse, the priest or pastor—who, quietly, without blare of trumpet, in the discharge of duty are found on the firing line. Peace has her heroes, as well as her victories 'not less renowned than war.'

"Of course, the man who buys moonshine from a strange bootlegger takes his life in his hand, too. But he is no hero. He is often too dumb to know that he is flirting with blindness or with death.

"It often requires more courage to refrain from doing an obviously brave deed than to do it. The wise man faces danger only when he should; when he has counted the cost and found that the end sought is greater than the risk involved. Only fools needlessly court death."

Selecting a Doctor

Choosing a physician is an important problem when a person moves into a strange community. Certain guideposts to aid in making a safe choice are outlined in an article in the March issue of *Hygeia* by Helen H. Fortune.

Taking a hypothetical family of Joneses, the author shows how they learned of various physicians and how they decided on a dependable one. The first man considered had been graduated from a third-rate medical school and had had no advanced training. A second had had good training, but was no longer a member of his county medical society or of the American Medical Association. Still a third was crossed off the list because he had not maintained hospital connections. If the Jones family needed hospital treatment, they preferred that their family doctor be entitled to arrange for it.

All these doctors had been suggested by neighbors. Then Mrs. Jones remembered that she had heard that in many cities there are physicians' exchanges. They found one existed in their city, and from it they obtained several names from which to choose. The eminently sensible Mr. Jones made his choice on the following considerations: Dr. Blodgett lived near the Joneses and would answer night calls if necessary; he was a graduate of a good hospital and medical school, a member of several professional societies; he was on the staff of the largest local

hospital, and at fairly frequent intervals he went to a great medical center for a special course of a few months.

These are criteria by which a reliable physician may be judged. When there is no physicians' exchange, the best hospitals will furnish the names of their staffs, the directory of the American Medical Association may be consulted, or the local chamber of commerce may have reliable information.

Do Children Have Tuberculosis?

The question is answered by Chadwick and McPhedran in a special pamphlet for physicians that has been issued by the National Tuberculosis Association in connection with the 1930 Early Diagnosis Campaign. It contains diagnostic aids helpful to all physicians who will be called upon to examine children during April and May, the period in which an intensive educational campaign will be conducted. It will also be valuable to physicians in cities where medical service will be enlisted for case-finding programs featured by the tuberculin skin test and the x-ray.

The text was prepared by Dr. Henry D. Chadwick, under whose direction over fifty thousand children were examined in Massachusetts. He describes in detail the childhood type of pulmonary tuberculosis, and explains the tuberculin test by the Mantoux method as applied at the Henry Phipps Institute, and also explains the Pirquet method. The case-finding work as practiced in Massachusetts, giving the two plans of procedure, is carefully outlined.

Dr. F. Maurice McPhedran makes a classification of tuberculous pulmonary lesions in childhood and adolescence, and cites nine types of lesions. There are seven x-ray plates furnished and interpreted by Dr. McPhedran and reproduced by the aquatone process on the finest grade of paper. A unique touch is the diagram which accompanies each x-ray plate so that the reader may readily and unmistakably identify the lesions in the text. Three plates, in color, of tuberculin reactions are reproduced by the same exacting printing process.

The foreword states that the manual attempts to correlate the knowledge we now have of the etiology and evolution of tuberculosis in children. We quote as follows:

"Pulmonary tuberculosis of the adult type is not commonly seen in young children. Children do, however, exhibit the earlier forms of tuberculosis. The importance of discovering the early lesions is obvious, for in many cases such knowledge enables the physician to prevent the catastrophe of a later, adult type of pulmonary tuberculosis. The subject is still new, and links in the chains of etiology, pathology and prognosis are missing; but Dr. Chadwick, in collaboration with Dr. McPhedran, has prepared a summary based on their own experience and on the work of leading tuberculosis specialists in the United States. The manuscript of the manual was submitted before publication to the Committee on Childhood Tuberculosis of the American Sanatorium Association and careful consideration was given to all suggestions and criticisms. In all essentials, the members of the committee are in agreement.

"For two consecutive years the tuberculosis associations of the United States, in coöperation with the National Tuberculosis Association, have made a special effort, in April intensive campaigns, to impress on the public that early discovery promises early recovery. The reason for this educational activity was the discovery that over seventy-five per cent of the persons seeking sanatorium treatment were already advanced cases when application was made for admission.

"As a result of the campaigns in 1928 and 1929, thousands of adults were led to seek a medical examination and many were found to have tuberculosis or other serious defects. In planning for the 1930 campaign, it was decided that the time is now ripe to impress on the public that tuberculosis usually begins in childhood, and that definite methods have been discovered for learning what children are infected so that suitable treatment can be adopted for them, which will prevent the infection or a reinfection from developing into the adult type of tuberculosis.

"The subject of the 1930 campaign is a new one to most parents, teachers, nurses, health officers, school doctors, and to many members of the medical profession. It is the purpose of the tuberculosis associations to reach these groups, because they are responsible for the health of children. The important facts to be conveyed to the public by these agencies may be summarized as follows:

"1. That there is such a condition as the childhood type of tuberculosis, which is different from adult tuberculosis. There is slight immediate, but considerable prospective, danger.

"2. That only two or three per cent of all school children have the childhood type of tuberculosis, but

it is from this group that more than half the cases of adult pulmonary tuberculosis will be recruited later.

"3. That the only way to determine the extent of childhood tuberculosis is by the examination of all children, the apparently healthy as well as those subnormal, and that such examination is of doubtful value without the tuberculin test, and the further taking of x-rays of positive reactors.

"4. That all children selected as having childhood tuberculosis will not necessarily develop the adult active form. Whether a given case will or will not develop the disease is a matter of medical prognosis and dependent largely on the care that can be given the child.

"5. That all such children should be placed under competent medical supervision; have their work, play and sleep carefully supervised and regulated, and in other ways, which will be indicated by the physician in the particular case, be placed under a careful regimen of life."

The campaign in this state is being organized by the West Virginia Tuberculosis and Health Association 910 Quarrier Street, Charleston, W. Va.

The Soul of Medicine

Speaking on "The Soul of Medicine" before the Woman's Club of Buckhannon, Dr. S. S. Hall, of Buckhannon, made the following interesting address:

I have chosen this abstract title for a concrete "something" that I might have the opportunity to give a little of my philosophy, criticism, and commendation of my life's purpose and labor. I could have spent my time reading to you excerpts from famous books on "How to Reduce," "How to Keep Well," or almost any other medical subject mentionable; but I feel that is not needed. All that type of information is available for the laity. Our philosophy is not so accessible nor sought after, but I am going to take this liberty, and feel that you will listen to what I have to say and may like some of it.

I am yet a young man—too young to have a philosophy founded upon a ripened life of fruitfulness, but not too young to have an attitude or habitus about a thing second only to my belief in God. I do not say this to put the subject in a sacred light, for I should certainly be sacrilegious were I to begin my talk under that impression.

Many of us begin our contemplation of the study of medicine with the ministry closely pressing for consideration. We choose the former because we feel there are a few things that make us more fitted for it.

Our tenets and attitude may at times seem questionable to you; but, if you will analyze them from an unprejudiced standpoint, you will find us sincere in ninety-eight per cent of the cases. Then, if you asked us to let you see it from our viewpoint as well as the patient's, you will find the one hundred per cent that you expect and demand.

It is quite amusing to keep a written record of one's criticisms and plaudits. The latter exceed the former many fold; but one criticism, although unjustified, causes your physician more hurt than a hundred plaudits do him good. The greatest fee you can pay your physician is appreciation and understanding. Monetary receipts pay grocery bills and are essential, but it is paramount that fees other than dollars and cents be paid.

In this day and age one hears much about the cost of medical education—even talk of shortening the courses. I, personally, know of a young man who put into his education everything financially that he had in the world, and that young man felt and feels yet that he is not yet as fully qualified as he would like to be.

No, do not shorten the courses nor lessen the hours of hard study, nor lessen hospital service. Do not lessen anything. Lengthen the time, course, and hours of study. If the man will make a success after graduation, he will in school. That means managing finances, too. The American youth can get anything he wants if he goes after it and does not quit. If he is a "quitter," let us drop him out of the practice of medicine before he begins.

One must have ideals as a perquisite to being a physician. Among these, *service* is first. He must believe in himself, in medicine, in his patient.

One must have character. He must be morally unshakable, mentally keen, religiously inclined (at least to the extent of knowing there is a God); tolerant, not to the point of compromise but to the point of fairness. These are some of the attributes of a great physician.

The curricular requirements appear quite formidable, but, as I stated before, I do not believe they are too much so. To be able to enter a Class A medical school, one must be an eighth-grade graduate, a high-school graduate, and must have had two years of college with certain courses included. Then one must have four years of medicine, and practically every Class A school is now requiring an extra year of interneship—fifth-year medical course

is what it amounts to. But this is none too much; it is still deficient.

There are also the physical qualifications that are very important. One must be healthy to the fullest extent of the word, dextrous, skillful—in fact, if he is to succeed, he must be better than of average physical caliber.

The mental habitus is a composite that either makes or breaks every young physician. He must be mentally alert, have and exercise rare judgment, cultivate and maintain an accurate conscience—we may style it an obedience to the inner man—coöperation, smooth yet firm, quiet, confidence-inspiring and confidence-maintaining.

Cost of medical education was discussed only casually; let us inspect it more closely. Education, properly acquired and expended, is a tremendous asset. In no way does a medical education dissociate itself from this fact. I am fairly familiar with a young man in whom I am particularly interested, and I am informed from a reliable source that he summarizes his cost thus: Actual money spent, $10,000; loss of time, four years in high school, two years in pre-medical school, four years in medical college, one year's hospital practice—a total of eleven years' time invested. There is no way to estimate this cost, he informs me, but he feels that he could have saved at least one thousand dollars each year had he worked. Even yet, medical education at the cost that would represent is not too high.

Probably no other field of endeavor is any more divided and subdivided into "-isms," "-ics," "-paths," and what-not than medicine and its interrelated sciences. To set one right and define these different cults alone would require hours. I shall simply pass on and leave this broad generalization. The man who has made medical science was it is today is represented by your M.D. The others are nothing more nor less than cheap imitations.

Let us have a little relative to the "cults". I feel much as to them as the classical expression implies regarding a certain strata of civilization: "We have them with us always"—and I might humorously concede a part of the time, honored and loved them for what has made so many of them. I like to feel that Deity can not be blamed for man-made weaknesses—cults are probably such.

I am about to digress and state my reactions—it is not good politics; it is not apropos. What I am about to say I shall say from the viewpoint as though I were able to become a dual personality—one a super-tolerant, unprogressive, manacled individual; the other an outspoken, frank, straight-shooting one. To me it seems the cults are no more than barnacles attaching themselves to a majestic masterpiece of mechanical product without having contributed one iota to such production. This they must do because they can not of themselves, with their tenets, philosophy, knowledge or skill, get what they want nor where they want without commandeering a mode of passage.

I have read a little of the history of medicine—not enough to be thoroughly conversant with the subject, but enough to satisfy myself that all the great advances in medicine have been made by what is now and was then comparable to the doctor of medicine. In anatomy, Guido, Fallopius, Vesalius, and Herophylus; in physiology, Descartes and Harvey; materia medica, Galen; surgery, Guy de Chayliac, Casserius, Da Costa, Crile; medicine, Osler and Albutt; pathology, Virchow and Linacre. These are a few of the representative makers of our revered profession.

All lines of research that have produced tetanus antitoxin, diphtheria antitoxin, smallpox vaccine, insulin, and sanitary and hygienic advances may be attributed to the unselfish work of your medical profession. How can I better qualify the cults than as barnacles? The cults I need not name; you know them.

In medicine, as in all other professions, we must live in body as well as in ideals. However, I can speak for the profession when I say it enjoys charity *per se*; we resent charity that has fine clothes, cars, and other luxuries to the inability of being able to pay their physician. Some of the happiest moments of my life have been spent in working with charity patients. True, the fees from this source do not pay the grocer, but one feels that he has "laid up for himself some place."

Probably this little rambling talk would not be complete without mentioning fees. Sometimes we are misunderstood regarding our fees. It is always the endeavor to set a fee that is commensurate with the patient, finance, and result. I know enough about our city to know that, here, the fees are fair, as they are in every other section. But there are certain "fees" and "receipts" that can not be supplanted by the dollars of the rich nor the thanks of the destitute. There are passages in the great Book that read something like this: "Lay up for yourselves treasure in Heaven," and again: "For inasmuch as ye have done it unto the least of these . . ."

The physician has never been paid in the currency of any nation, of any age, by any rank, king or beggar, his earnings. Many of us have died in poverty; many of us will continue to do so; but every one of this group can look back over his life with some regrets but with an excess of satisfaction, for he has done, in his small way, that which he started out to do—help relieve the suffering of mankind. He has "kept the faith." The child which has regained the use of a limb by patient study and care; the aged who have had a restoration of sight by surgical aid; the goiter patient being literally saved from insanity or the grave—all are listed among our resources, and we must have these intangible assets to feel that we have been paid in full.

Yes, we have a purpose in life. In looking up some medical references recently, I came across the Hippocratic oath, a portion of which I shall quote: "I will keep pure and holy both my life and art. . . . If I carry out my oath and break it not, may I gain forever reputation among all men for my life and my art; but if I transgress it and forswear myself, may the opposite befall me." We will paraphrase, condense and add that it is our purpose to give the best we have at all times for a reasonable pecuniary recompense with a maximum of appreciation, that we and our families may live and enjoy an equal amount of necessary worldly goods with our patients; to give permanent relief from pain and its resultant stigmata; to exemplify the Great Physician; to live, practice and grow in our profession in the eyes of critical medical scientists and God.

I shall close with this excerpt from a poem by Neidhardt:

"Let me live out my life in the heat of blood,
Let me die drunken with the dreamer's wine,
Let me not see this soul house built of mud,
Go tumbling to the dust a vacant shrine.
Let me be as the tune-swept fiddle string
That feels the master melody and then—snaps."

Suggestions to Authors

An interesting pamphlet on "How to Prepare Manuscript and Correct Printer's Proof" has just been received from P. Blakiston's Son and Company, Inc., of Philadelphia. It is primarily a guide to authors who are either preparing a book for publication or have the manuscript in the hands of the printer. The pamphlet was published "to enable an author to make his manuscript as perfect as he can before submitting it. . . . The following instructions, if abided by, will be of great aid to the physician, insure dispatch, avoid vexation. . . ."

While the instructions in the Blakiston pamphlet deal with book publication, practically all of the points covered therein apply also to the preparation of scientific papers for publication in a medical journal. For this reason a part of the subject matter contained in the pamphlet is reprinted herewith:

Manuscript should always be typewritten and double-spaced. Use only one side of the paper. Be sure to number the pages, and keep them flat. A carbon copy of the manuscript should be kept by the author.

Authors should be watchful for inconsistencies in arrangement, spelling, nomenclature, use of the metric and English systems, etc. Do not use numbers in one place and words in another, *e.g.*, "five mm. long and 3 wide." Be consistent in their use throughout the manuscript. Limit numbers to measurements and statistics; do not use them in descriptive or declamatory passages; *e.g.*, "She was fourteen years old," not "14 years." It is better to spell the month when giving dates, as 11/6/30 means November 6th in some countries, in others it means 11th of June, 1930.

Edit and correct the manuscript; do not wait to do the polishing or editing on the printer's proof. Corrections made by authors on the printer's proofs are costly, and, since the price of a book is based upon the cost of it, the purchaser is the victim.

Borrowed illustrations in a new book detract from its originality, therefore, new pictures are preferred. All pictures (with their legends) should be separate from the manuscript and have the size that they are to be in the book indicated on each one; otherwise, they may be reduced too much by the engraver. Changes made after the engraving has been done will be at the author's expense. If borrowed cuts are used, be sure to give title, edition, figure and page number of the publication from which the cuts are to be taken. Always get permission to quote from copyrighted works, and give due credit for borrowed cuts or text. Drawings for illustrations should be made at least twice the size they are to appear in the book. Be sure that the smallest lettering on them is large enough to be quite legible when reduced. Full-page pictures and tables should be prepared so as to be upright on the page of the book, when possible. Lettering on printed tables too often appears sidewise or even upside down. This latter position is indefensible. Colored pictures should be few or none, as they are difficult to reproduce and, of course, add to the cost very materially.

Proofs of the pictures will be sent to the author. These proofs must be numbered in sequence and

returned with the corrected galley proof. Their appropriate position on the galleys must be indicated by number.

NOTE.—*An author must not rely on the printer's reader, but should exercise exceeding care himself; otherwise, he is likely to be very much chagrined over the mistakes in his book. It is better to be careful than sorry.*

The first proofs sent to the author are the galley proofs in duplicate, on both of which all corrections or changes should be made. Always compare the galleys with the manuscript, and return the manuscript with one set of galleys. The other set is retained by the author for reference.

Page proof will be sent in duplicate and should be read carefully to see if the corrections made on the galleys were taken care of. One copy of the page proof should be returned promptly along with the related galley and the duplicate page proof retained for index purposes.

To make changes on the page proof is still more costly, as such changes may extend or overrun the matter on that page and cause alteration on every succeeding page to the end of the chapter. The greater the number of changes, the greater the risk of other mistakes being made by the handling of the type.

It is sometimes advisable to insert later information, or alter or modify the matter on galley proofs, or even page proof, when it is important; therefore, we allow a reasonable number of hours for such changes or corrections, for which we pay. The author is charged for the time spent on corrections on proof in excess of the hours allowed by us in the contract.

Corrections on proof should be legibly written in ink of a different color to that used by the printer's proofreader.

A good book merits a good index. The author should prepare the index during the interim between his return of the corrected galley proofs and the receipt by him of the page proof. The index is made as a separate list, on which is copied, from the author's duplicate galley, all the names, etc., that are to be indexed; then, when the page proofs are received by him, the page numbers should be added to the subjects on the prepared list, which is sent to us, along with the *last* of the page proofs. Remember that an adequate index is expected by the reader and looked for by the book reviewer or critic.

If the above instructions are followed, the author should not be put to any expense.

Follow *Gould's Medical Dictionary*, *Hackh's Chemical Dictionary*, and *Webster's International Dictionary* for spelling. Do not use simplified spelling, *e.g.*, *tho*, *altho*, *thru*, etc.

The Physical Test

The following editorial appeared in a recent edition of the *Wheeling Intelligencer*, Wheeling, West Virginia:

"The West Virginia Medical society will urge, at the next regular session of the legislature, passage of a law requiring the rigid physical examination of all applicants for automobile operators' licenses. The physicians are to be congratulated for pressing such important legislation, and every thoughtful legislature will coöperate with them. We have needed, badly, a law of this kind for many years. When we have it, it should be strictly enforced.

"One of the principal causes for the very excessive number of automobile accidents, and the consequent loss of life and damage to limb and property, is the fact that anybody with a dollar can get a license from the state road commission, permitting the driving of a high-powered motor. Therefore, all over the state, we have hundreds of people driving, frequently killing and injuring themselves and others, who have no good reason to be in charge of an automobile.

"Everywhere may be seen children, neurotics, cripples, known alcoholics, color-blind persons, those afflicted by deafness and other infirmities, driving automobiles. This condition simply invites disaster, with all the traffic congestion and many pedestrians. The holder of a West Virginia driver's license ought not only to be physically all right, but he should be made to pass a mental test, moral examination, and a practical demonstration. All these requirements are necessary in many American states and most foreign countries.

"Driving an automobile entails an obligation toward the general public which the law ought to recognize. The best time to prevent accidents is before the factors for them are placed in operation. Such factors are incompetent persons, mentally and physically. Because many of this sort are loose on the roads is the reason for the appalling accident toll. Mental examinations should be conducted along with the physical, and then the state police should watch the candidate for a driver's license in a practical test, as is done in Pennsylvania.

"The legislature, in making a law of this kind, can perform no greater single service to the public safety.

Proposed Amendments

At the Martinsburg meeting of the West Virginia State Medical Association last May there were five amendments to the constitution and by-laws proposed by Dr. C. A. Ray, of Charleston. These amendments will come up for final action at the White Sulphur meeting next year. The present set of by-laws provides that each amendment, before it can be voted upon, must be published in the WEST VIRGINIA MEDICAL JOURNAL at least twice during the year that the amendment is on the table. The amendments proposed by Dr. Ray are consequently published herewith for the second time:

"Section 1. The officers of this association shall be a President, three Vice-Presidents, an Executive Secretary, a Treasurer, twelve Councillors to be elected as provided in Section 2, and two Councillors-at-large, who shall be the retiring President and his immediate predecessor.

"Section 2. The officers, except the Councillors, shall be elected annually. The terms of the Councillors shall be for two years, one-half being chosen each year. No Councillor shall be eligible to succeed himself after four years as Councillor, but may be elected after two years' absence from the Council. All these officers shall serve until their successors are elected and installed.

"Section 3. The officers of this association shall be elected by the House of Delegates on the evening of the first day of the annual session, immediately following the President's address.

"Section 4. The retiring President shall be Chairman of the Council for the year following his term of office, and shall not be eligible thereafter for any elective office of the association except for delegate to the American Medical Association or Board of Publishers.

"Section 5. The President, the three Vice-Presidents, and the Treasurer of this association shall be members of the House of Delegates by virtue of their respective offices."

Another change in the by-laws of the association has been suggested, relative to the medical defense fund, and it is understood that the defense fund will be reinstated at White Sulphur. The council of the association went on record last December 28 as favoring the reinstatement of this fund and voted to recommend reinstatement to the house of delegates. The defense fund was abolished on January 1, 1930, in accordance with the action of the house of delegates at Martinsburg in May, 1929. However, the council last December authorized optional collection of the medical fee for 1930 with the assumption that the fund would be reinstated at the White Sulphur meeting.

Indications are that the old by-law known as Chapter 11 will be changed somewhat when the medical defense provision is reinstated therein. It has been proposed that the committee on medical defense consist of six members, instead of three, and that the committee members be appointed by the incoming president each year, one member from each of the six councillor districts. It has also been suggested that, in case of litigation for malpractice, it shall be the duty of each individual committeeman to investigate the litigation only in his particular councillor district. If a case is worthy of defense, the committee member in the district shall assist and coöperate with the defendant in preparing his case, and shall report same at the next council meeting.

Among the other changes that have been suggested in the administration of the medical defense fund is a provision to pay the committeemen and all doctors serving as expert witnesses for their time and expense when they are called upon to assist or testify in a case, provided such physicians have to leave their counties or home towns for the purpose.

The last and perhaps the most important change that has been suggested is a provision to raise the necessary expenditure from $300 to $500 in any one case. Of this amount, however, only $100 can be expended for attorney fees; the remainder to be paid out, if necessary, in assisting the defendant to build up his case by providing expert witnesses and the like.

Whatever action is taken in regard to the medical defense fund will be introduced at the meeting of the house of delegates on the evening of May 19. This will enable the amendment to lay on the table the required time and to be presented for final action at the meeting scheduled for May 22.

Truth About Medicines

Gelatin Compound Phenolized-Mulford. — A mixture composed of gelatin, zinc oxide, glycerin, and water, containing 1.5 per cent of phenol. It is used in the preparation of bandages to cover chronic ulcers, unhealed secondary burns, and in the preparation of pressure bandages for varicose veins when surgical treatment is not necessary. H. K. Mulford Co., Philadelphia.

Typhoid-Paratyphoid Prophylactic, Hospital Packages.—Typhoid-Paratyphoid Prophylactic (N. N.

R., 1929, p. 379) is also marketed in hospital-size packages containing ten complete immunizations. Cutter Laboratory, Berkeley, Calif.

Ampule Solution Silver Nitrate 1 Per Cent-Cutter.—Solution silver nitrate 1 per cent, approximately 0.2 c.c., contained in ampules composed of beeswax. They are used for the prevention of ophthalmia neonatorum. Cutter Laboratory, Berkeley, Calif.

Merthiolate—Sodium Ethylmercuri Thiosalicylate.—Merthiolate contains from 49.15 to 49.65 per cent of mercury in organic combination. Merthiolate is a potent germicide for spore-bearing and non-spore-bearing bacteria. It is used for sterilizing tissue surfaces. It does not precipitate with serum proteins. Merthiolate is much less toxic than mercuric chloride. Merthiolate is supplied in the form of merthiolate solution 1: 1,000, containing 1 gram of merthiolate in 1,000 c.c. of water, buffered with 1.4 gm. of sodium borate in 1,000 c.c. and containing sodium chloride to make the solution approximately isotonic. Eli Lilly & Co., Indianapolis. (*Jour. A. M. A.*, December 7, 1928, p. 1809.)

Polyanaërobic Antitoxin.—An anaërobic antitoxin (N. N. R., 1929, p. 346) prepared by immunizing horses with the toxins of *B. tetani*, *B. Welchii*, *Vibrion septique*, and *B. œdematiens*. It is marketed in bottles containing 100 c.c., each 100 c.c. containing at least 5,000 units of tetanus antitoxin, 75 units of Welch bacillus antitoxin, and sufficient antitoxin to neutralize 50,000 minimum lethal doses of *Vibrion septique* toxin and 100,000 minimum lethal doses of *B. œdematiens* toxin. Cutter Laboratory, Berkeley, Calif.

Thompson's Maltose and Dextrin.—A mixture containing maltose 51%, dextrins 45%, sodium chloride 2%, and moisture 2%. On the claim that maltose is more readily assimilated than other forms of sugar, this mixture is proposed to supplement the carbohydrate of cow's milk or of water modifications of cow's milk. Thompson's Malted Milk Co., Inc., Waukesha, Wis.

WOMAN'S AUXILIARY

Remarks on the Auxiliary

At the special request of the state Auxiliary, the JOURNAL takes pleasure in reproducing herewith the remarks made by Dr. Harry M. Hall, of Wheeling, past president of the West Virginia State Medical Association, at the organization meeting of the Auxiliary to the Ohio County Medical Society at Wheeling on January 27, 1930. Dr. Hall, during his interesting address, particularly accentuated the following points:

"The Woman's Auxiliary to the West Virginia State Medical Association is a tribute to the women. A compliment by way of necessity; a confession that woman, the doctor's wife, can, in her own way, contribute to the great profession of medicine by wise organization and the helpfulness that comes from it. It has been well demonstrated in life that men create and women polish off that creation, and the one is as big a gift for civilization as the other. The activities of medical men need the finer graces to make them, in the modern light of attainment, a more gracious achievement.

"It is not expected that this organization is an attempt to meddle in the day-by-day work of the physician. There are still medical men who might resent the entrance of women into any part of their affairs. They belong to that fast-disappearing contingent who believe a woman's place is altogether a matter of domestic duty. These auxiliaries have been successful and no complaint is heard of any usurpation.

"Indeed, most doctors' wives are rather glad to escape the recital of their husbands' defects and successes. There are two main objects in this organization: namely, professional and social. There are many phases of a doctor's life pertaining to his existence outside of healing of the sick. Like all other endeavors in life, medicine has its enemies, its perplexities, its misunderstandings from without. Oftentimes slight difficulties arise between physicians. They are usually trivial in the start. A good understanding between their wives by way of the same organization would gradually heal the breach. There are often times when the public misunderstands the medical profession. The women, by way of their women's clubs and an individual organization, can serve to enlighten the public better than their husbands. There are many other individual activities of the same sort.

"The social side of the organization is by far the most important. Doctors do not play enough. Outside of golf and perhaps the great American game of poker, doctors do not know how to play. Their lives are irregular and their worries many. So it consequently tells on them physically. Individual efforts of wives to help the situation are not so successful. Coördinated action is, and it is hoped that you will see your way clear to help the situation.

"It has been said it is difficult to bring wives of any group of profession into a social group. It has not been found so elsewhere. Wheeling should not be a bad example in this respect. We are in a high calling. We should recognize it. It is true one hundred wives of one hundred men are bound to have different social pursuits. In this one particular all that should be forgotten and every one remember the high calling demands a high grade of social contact. If this can not be done, it is better that you do not go ahead with this. It is expected that Wheeling, having the Ohio County Medical Society, one of the best in the state, should also have one of the best auxiliaries. We are seeking to place our city in the sun; this is one way to do it. An auxiliary gives the doctor's wife a definite standing. She attends meetings of the men, not just as an extra tire, but as a member of a definite organization that recognizes her true relation to the success of her husband.

"Many doctors, whether they admit it or not, owe their success to their wives. They keep them normal in a calling that deals in nothing but the minor key—sorrow, illness, distress, disease, and death. Many a cheerful doctor starts out because his wife made him that way at breakfast. In their quieter intervals, doctors often, when among themselves, pay tributes to their wives that any woman would be proud to know had been said of her. No woman has to face the problem of sharing her husband's time in the pursuance of their calling as do doctors' wives. It is not a situation for those in whom jealousy rules. When you see an old couple, a doctor and his wife, you see a wise woman who has allowed the minor irritations of life to roll over her without being afraid or worrying over the outcome. The wife of a doctor must needs have one of the world's greatest philosophies, and she has. And a woman who is not capable of a great, tolerant philosophy had best marry into some other vocation. A physician must share his time under the most personal surroundings with men, women, and children.

"We trust you will enter into this whole-heartedly determined to make the organization a success. There will be cliques; if they are good cliques they are a necessity. If they are not, remove them. As some doctors do not take an interest in medical affairs, it is to be expected some of their wives will not; but the splendid attendance this afternoon assures a splendid future for the organization. When the others find it a real success they will come forward, as they always do. It can be depended upon that the women who are here today are those who will make it a success. Some places they have 100 per cent attendance, and when they meet with their husbands that also is a 100 per cent attendance.

"Each location is expected to run its own affairs to suit its own community. You are an auxiliary, but are an independent group. The men's organization does not expect to tell you what to do. You will give your city the signs of a closer solidarity in the medical profession. Organization is what we desire, and we hope it may some day take in the sons and daughters as well, that they may grow up to honor the vocation of their fathers. We trust there will be no wallflowers, and that every one of you will take it as a duty to speak your minds as occasion requires.

"This is woman's golden age. Everywhere we see the touch of the feminine hand—so why not in medicine? But, after all is said and done, the chief reason for your existence is that you shall be friends and your husbands friends. It is likely that there are women here, just as there are in all callings, who do not even know one another when they meet on the street. It is scarcely a highly commendable thing in this hour and day of enlightenment. But it just happens you have never been called together by any single reason. There is one now—the Woman's Auxiliary. Let us all be friends despite the taunt that this is a cynical age. Write all your constitution your by-laws, your various aims, the fundamental principle underlying it all is that you all know each other as friends and contrive among you to make the pathway of your husbands fraught with an easier step."

Kanawha Auxiliary

Mrs. O. L. Aultz, of Charleston, was elected president of the Woman's Auxiliary to the Kanawha Medical Society at the regular December meeting, which was held at the home of Mrs. John E. Cannaday. Other officers included Mrs. Robert King Buford, first vice-president; Mrs. O. H. Bobbitt, second vice-president; Mrs. R. H. Paden, secretary, and Mrs. U. G. McClure, treasurer.

The January meeting was held at the home of Mrs. I. P. Champe, of Charleston, at which time Mrs. Ada McDermott gave an interesting talk on "Sex Education in the Home." Hostesses were Mrs. Champe, Mrs. R. K. Buford, Mrs. Hugh Robins, Mrs. R. R. Summers, and Mrs. V. T. Churchman, Jr.

MONTHLY MORBIDITY REPORT

BY COUNTIES

FEBRUARY 1930	Chickenpox	Diphtheria	Influenza	Measles	Scarlet Fever	Smallpox	Trachoma	Tuberculosis, All Forms	Typhoid Fever	Whooping Cough
Berkeley	----	1	----	----	1	----	----	----	----	----
Boone	1	----	17	----	----	----	----	----	2	2
Braxton	----	2	1	----	5	----	1	1	----	8
Brooke	1	----	----	1	7	----	----	----	----	----
Cabell	----	1	----	1	----	----	----	----	----	7
Calhoun	----	----	----	6	----	----	1	----	----	----
Doddridge	3	----	16	10	1	----	----	1	----	4
Fayette	1	----	----	----	4	----	----	2	7	----
Gilmer	----	1	----	----	8	----	----	----	----	----
Grant	1	----	2	----	----	----	----	----	----	----
Greenbrier	----	3	----	----	7	----	----	----	----	----
Hancock	4	----	----	----	10	----	----	1	----	----
Harrison	60	5	----	3	12	----	----	----	----	9
Kanawha	64	1	5	30	13	9	----	5	13	64
Lewis	----	----	----	----	18	2	----	----	----	3
Lincoln	----	----	----	5	1	6	----	----	----	3
Logan	2	1	----	44	11	31	----	2	1	9
McDowell	4	3	----	39	3	14	----	1	----	----
Marion	5	----	----	16	13	----	----	----	----	----
Marshall	1	----	----	2	8	----	----	1	----	1
Mason	4	----	12	----	----	----	----	----	----	----
Mercer	2	3	4	14	----	----	----	----	2	6
Mineral	57	----	26	10	7	----	----	6	----	20
Mingo	1	----	----	78	6	9	----	----	----	2
Monongalia	----	2	----	----	5	----	----	----	1	----
Nicholas	5	----	----	----	----	----	----	10	----	----
Ohio	13	3	----	8	5	----	----	----	1	22
Pocahontas	7	6	----	----	1	----	----	1	----	----
Preston	1	----	----	----	6	----	----	----	1	----
Putnam	1	----	10	----	----	----	----	2	1	----
Raleigh	9	1	----	1	3	----	----	----	1	8
Ritchie	4	----	----	----	1	----	----	1	----	2
Tyler	4	----	2	1	----	----	----	----	----	2
Upshur	----	----	----	----	----	2	----	----	----	2
Wayne	9	3	----	26	4	67	----	----	----	----
Wirt	3	----	32	----	1	----	----	----	----	----
Wood	11	3	8	----	19	1	----	1	----	9
TOTALS	284	39	135	295	197	141	2	35	31	187

The West Virginia Medical Journal

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JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - Huntington

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ERRORS IN DIAGNOSIS AND TREATMENT OF THE MORE COMMON ACUTE ABDOMINAL CONDITIONS *

By GEORGE J. HEUER, M.D.
Cincinnati, Ohio

The subject upon which your secretary has asked me to speak is one not altogether easy of presentation. He had in mind, I think, a discussion of the more common errors in the diagnosis and treatment of acute abdominal conditions into which we, as physicians and surgeons, all occasionally fall; and with the idea, I imagine, that such a discussion, by recalling our mistakes, might tend to make us more alert in avoiding them. I am not sure that it will; but certainly it can not do any harm to study the errors we commonly make and with the purpose of discovering data which will help us to avoid them and of learning their seriousness from the standpoint of the patient. It is from these two viewpoints that I propose to discuss some of the commoner acute abdominal conditions; for it is obvious that in the time at my disposal I can not discuss them all.

I. *Acute Appendicitis.*—I shall take up first the subject of acute appendicitis. Recently we have made a careful study of 1,718 cases of appendicitis which have been admitted to the Cincinnati General Hospital. The study shows some interesting facts:

(1) Appendicitis, as long known, is a disease of adolescent and early adult life, 68% of the cases occurring between the ages of ten and thirty years. But a fact not always appreciated is that it occurs more frequently in children under thirteen years than in any decade over forty.

(2) When we study the time interval between the onset of symptoms and the admission to the hospital in all cases of acute appendicitis, we find that it averages 3.4 days. In the first 600 cases studied it averaged 4.9 days. This long interval between the onset of symptoms and the admission to the hospital is due either to the failure of the patient to call a physician, or to the failure of the physician to make a diagnosis, or to the refusal of the patient to submit promptly to surgical treatment after a diagnosis has been made, or, finally, to the desire of the physician to treat the condition medically.

(3) A study of all the cases of acute appendicitis shows that 27% of them had had previous attacks, while 72% entered the hospital in their first attack. When we consider, as I shall presently indicate, that the appendix in almost 50% of all cases of acute appendicitis had already perforated on admission to the hospital, we realize the danger of treating expectantly either the first or subsequent attacks of acute appendicitis in the hope that they will subside.

(4) A study of our operative records shows that of 1,216 cases of acute appendicitis admitted to the hospital the appendix in 597 cases was found in all

* Read before the Central Tri-State Medical Society at Huntington, West Virginia, January 23, 1930.

stages of acute inflammation, including gangrene, but had not perforated; while in 530 or 47% of the cases the appendix was found at operation to have perforated and to have caused either a localized abscess (80%) or a varying grade of peritonitis (20%). This is an accurate statement of the actual conditions on admission, for all cases were operated upon within an hour of admission.

(5) A study of the operative mortality in acute appendicitis shows that in 596 cases in which the appendix had not perforated the mortality was less than 1%; with perforation and abscess formation it was 12.5%, and with perforation and spreading or general peritonitis it was 43%. In 477 cases of chronic appendicitis there were no operative deaths, a mortality of 0%

To sum up these statements, I find what, to me, is a surprising state of affairs with regard to acute appendicitis; namely, that the interval between the onset of symptoms and operative interference averages three to four days, and that in almost 50% of the cases subjected to operation at the Cincinnati General Hospital the appendix had perforated at the time of operation. It is, of course, impossible for me to say what is precisely responsible for this condition. It may be that the class of patients who naturally come to the Cincinnati General Hospital fails to call a physician early in the disease; or that the physician makes a diagnosis but the patient refuses to submit to early surgical treatment; or that the physician fails to make an early diagnosis; or that he makes a diagnosis but treats the disease expectantly in the hope that the attack will subside. From my conversation with patients and physicians, however, I am convinced that errors in diagnosis of acute appendicitis are still common and that the attitude of many physicians regarding treatment still is to wait for an acute attack to subside before subjecting the patient to operation.

What is responsible for errors in the early diagnosis of acute appendicitis? It is to be emphasized that it is the early diagnosis of acute appendicitis with which we are concerned—the diagnosis before perforation has occurred—not the diagnosis after abscess or peritonitis has developed. For our experience shows that the mortality, the complications and the satisfactory late results all depend on early diagnosis and its corollary, early operative treatment.

A study of the symptomatology and physical signs in 1,216 cases of acute appendicitis shows that the so-called classical picture of the disease was present in only 45% of the cases. By the classical or typical picture I mean an attack which begins with pain, located in the epigastric or umbilical region, followed by nausea or vomiting, a moderate fever, a moderate leucocytosis and a moderate acceleration of the pulse. The pain within a few hours becomes localized in the right lower quadrant, and on examination there is at first generalized abdominal tenderness, but later local tenderness over or about McBurney's point and a varying grade of muscle rigidity or spasm in this region. Given such a picture, the diagnosis is not difficult; but, as I have stated, it occurred in only 45% of our cases. In its absence I can not, of course, tell you how to make a diagnosis; but I may make some observations which might be helpful. In the first place acute appendicitis is the most common acute abdominal condition which we see, and its very frequency warrants its serious consideration in the diagnosis of any acute abdominal condition. General abdominal pain in the early period of the attack occurred in 75% of the cases, but localized pain and tenderness in the region of McBurney's point occurred in 95% of the cases and, in our experience, is the most common and important single symptom of the disease. Nausea and vomiting are perhaps the next most constant symptoms, occurring in 75% of the cases. It is to be emphasized that vomiting usually is not frequent; it consists of one or two attacks coming on soon after the onset and then ceasing until the peritonitis develops. Localized tenderness and muscle rigidity or spasm would seem dependent upon the relation of the inflamed appendix to the parietal peritoneum. They are usually present, but if the appendix is retrocæcal or deeply placed in the pelvis they may be absent. In such cases deep palpation may reveal the local tenderness and a rectal examination may show tenderness or induration in the right fornix. I must emphasize the importance of a rectal examination in the diagnosis of acute appendicitis, for in 45% of our acute cases this examination showed tenderness, induration of the tissue, or a mass—of great vaue in our diagnosis. The average temperature in 1,210 cases of acute appendicitis was 100.1°; the average pulse rate 99, the average leucocyte count from 12,000 to 15,000 white cells; bearing out my previous statement that neither the temperature, pulse or leucocyte count are greatly elevated in the early period of acute appendicitis. The urine is usually negative, but may show pus cells and red blood cells when the inflamed appendix is in contact with the ureter or bladder;

and this finding may complicate the diagnosis and call undue attention to the kidney and ureter. Constipation is usual and diarrhea occured in only 6% of the entire series; and this fact is of importance in the differential diagnosis between acute appendicitis and the common gastrointestinal upsets which seem ever present.

In children the diagnosis of acute appendicitis is notoriously more difficult than in adolescents and adults. Neither the symptoms nor signs are so constant. The fever and leucocytes are commonly higher and the difficulties in eliciting local tenderness over the appendix region greater. In the absence of a diarrhea it is our belief, however, that in children as well as in adults an attack of acute abdominal pain with nausea and vomiting and with fever and leucocytosis should be considered acute appendicitis until proven otherwise.

The errors in the early treatment of acute appendicitis in our experience are chiefly two. Most important, I think, is the attitude of the physician toward this disease. We find that there still is a tendency to treat the disease expectantly in the hope that the attack will subside. Undoubtedly, many attacks do spontaneously subside; but it can not be foretold that any given attack will subside. I have indicated that of 1,216 cases of acute appendicitis 27% had had previous attacks and that 72% were in their first attack. Since about 50% of the entire number had perforated before admission to this hospital, it might appear that individuals in their first attack were more prone to perforation than those in their second, third or fourth attacks. But I doubt this or any other line of reasoning, provided good surgery is available, justifies the physician in treating a case of acute appendicitis expectantly if there are no definite contraindications to operation. The dangers of good surgery are almost *nil*, for I have indicated that, of 1,075 appendectomies, over one-half of which were in all stages of acute inflammation, including gangrene, the mortality was only one-half of one per cent. On the other hand, if the appendix is allowed to perforate, one of two things usually happens: the development of an appendiceal abscess or a generalized peritonitis. Without surgery, either of these conditions carries a high mortality; but even with good surgery the former is attended, in our experience, by a mortality of 12.5%, the latter by a mortality of 43%. These figures are sufficiently significant, I believe, to warrant the statement that every case of acute appendicitis deserves an early surgical consultation and that the dangers from perforation of the appendix are greater than those of operating in the acute stage of the disease or of waiting for an interval.

The second error in the early treatment of the disease is due either to the failure of the physician to make a diagnosis or his lack of understanding of the so-called medical treatment of acute appendicitis. The fundamental principle of this form of treatment, as you know, is rest or quietness of the gastrointestinal tract. We know from clinical and experimental observation that an inflammation of tissues or organs spreads less rapidly and is more likely to subside if the involved tissue or organ is completely at rest. For the intestinal tract rest is secured by withholding foods and fluids by mouth, by the administration of morphine, and by withholding all cathartics. Not only is such intestinal rest helpful in limiting the spread of the inflammation, but it is helpful in allowing the formation of adhesions about the appendix, so that if perforation does occur there will form a local abscess rather than a general peritonitis. That such medical treatment has not always been intelligently carried out would seem indicated from our studies, for we find that perhaps the worst error in this form of treatment—the purgation of the patient—was carried out in about one-third (30%) of all our acute cases. I hasten to say that I do not believe that the physician was always responsible for this, for I know that patients will take a cathartic without consulting or even against the advice of the physician. But, nevertheless, the administration of cathartics by physicians in acute appendicitis is not uncommon. As against immediate operation for uncomplicated acute appendicitis, I am opposed to medical treatment even if properly carried out; but I believe that its proper application is of benefit until surgery can be done or if surgery for any reason is not contemplated.

I come now to errors in the surgical management of acute appendicitis—for surgeons, as wel as physicians, are subject to error. I find many surgeons in this general region making use of a right rectus or other long incision in the approach to the appendix, instead of the well-known McBurney incision, both in acute unruptured appendicitis, appendicitis with abscess, and appendicitis with general peritonitis. This, I believe, is an error; for, whether one is dealing with acute unruptured appendicitis or appendicitis with abscess or appendicitis with peritonitis, the shorter and simpler McBurney incision meets every

requirement. The longer incision requires more time, is more difficult to close, is more prone to break down as a result of infection in perforated cases, and, therefore, results in a longer convalescence, a higher incidence of postoperative ventral hernia, and a higher incidence of postoperative intestinal obstruction. An analysis of our results shows that the mortality in all cases of acute appendicitis operated upon through a right rectus or similar incision was 33% higher than in all similar cases operated upon through a McBurney approach. While, of course, I do not attribute this increased mortality to the type of incision alone, yet I feel certain that it has, because of its greater magnitude and attendant complications, contributed to the mortality in very ill patients.

The improper use of drains in cases of appendicitis with perforation of the appendix is, according to my observation, another common error. I shall not enter into a discussion as to whether rubber tubes or cigarette drains or other kinds of drains are the best. Personally, I prefer the cigarette drain. But it is the proper placement of the drains, the number of drains used, and the time they are allowed to remain in the abdomen, which deserves comment. Drains should be placed along the parietal peritoneum to the point it is desired to drain, whether this be a localized abscess, the fossæ about the cæcum, or the pelvis; for otherwise they may, and do, cause obstructive symptoms. They should not be too many, for their vary bulk may prevent the drainage it is wished to secure, with the result that pus backs up behind them; nor should they be kept in too long, for similar reasons. I have repeatedly observed, in our own hospital, a patient who remained septic and in whom the removal of a drain or drains was followed by the discharge of a quantity of pus with prompt disappearance of septic symptoms; and I really believe that some of the pelvic abscesses which follow the primary operation are due to bad drainage, the pus which is unable to escape extending downward into the pelvic cavity.

The early recognition and prompt treatment of what, in our experience, are the two most common postoperative complications of acute appendicitis with perforation, *i.e.*, pelvic abscess and intestinal obstruction, are other errors which perhaps deserve comment. The failure of the temperature to subside rather promptly, the continued complaint of abdominal pain, the continued moderate to more than moderate distension of the abdomen, are clinical symptoms which should call attention to the fact that the patient is not progressing satisfactorily and which sometimes require repeated and careful examination to determine their cause. Infection in perforative appendicitis is prone to spread in two general directions—either upward along the course of the ascending colon, with the development of a subphrenic abscess, or downward, with the development of a pelvic abscess or of the so-called horseshoe pelvic abscess. In general peritonitis, abscesses may form between the leaves of the mesentery and present elsewhere than in the locations I have just mentioned. Of them all, the pelvic abscess is, in our experience, the most common and is most surely recognized by rectal or pelvic examination; and I would suggest repeated rectal examinations in cases which are not progressing satisfactorily. Prompt drainage is, of course, imperative as soon as the diagnosis is made.

Intestinal obstruction, whether of the nature of a paralytic ileus or mechanical obstruction, has occurred in 32 cases of the series I have been considering. It is always a trying situation. Patients are not uncommonly distended after operation, are uncomfortable, vomit, have an accelerated pulse, and may or may not get relief from enemata; or, after a period of satisfactory progress, they become distended, have cramplike abdominal pain, vomit, develop an accelerated pulse, and fail to have results from enemata. In the former case we proceed in the hope that the condition is a temporary paralytic ileus—wash out the stomach, give enemata, administer various drugs to stimulate intestinal peristalsis, and employ stupes upon the abdomen. In the latter we are prone to proceed in the same way in the hope that the obstruction is partial and temporary. Meanwhile, the patient's condition may get steadily worse, and when we finally realize that something surgical must be done it may be too late and the patient dies. The error here is not one of diagnosis of the condition, but of waiting too long before instituting measures for its relief. I am convinced from our own experience that it is safer to err on the side of too early interference and perhaps operate unnecessarily upon an occasional patient than to wait too long; and that the prompt high jejunostomy has been a real life-saving procedure. I would urge upon you the high jejunostomy with the introduction of the tube into the jejunum, as in the Witzel gastrostomy, rather than the old enterostomy or ileostomy. It is simple, can be performed under local

anesthesia, and answers its purposes admirably. I suggest that you take x-ray pictures of the abdomen in your cases of postoperative intestinal obstruction and convince yourselves of the desirability of an opening into the dilated jejunal loops. Of the 32 cases with symptoms of obstruction treated in this way, but two died as a result of intestinal obstruction.

II. *Acute Cholecystitis.*—With the foregoing remarks I pass on to the acute abdominal condition which, in our experience, is next in frequency to acute appendicitis; namely, acute cholecystitis. It is a condition which may be unassociated with stone, but usually is associated with stone or stones in the gallbladder, one or more of which temporarily or permanently occludes the cystic duct. Pathologically there must be all gradations in the condition. Even in the common, abrupt, so-called gallstone colic, with which you are all familiar, and which reaches its peak quickly and subsides promptly, there is some acute cholecystitis; for how, otherwise, can one explain the mild fever and leucocytosis? And from this mild form there are all transitions to the acutely inflamed, thickened and distended gallbladder with gangrene and even perforation of its wall.

In its origin we conceive of acute cholecystitis either as an acute infection of the gallbladder without stone, as occurs, for example, in typhoid fever, and in which the swollen mucosa, the result of an infection, produces the obstruction of the cystic duct, or of a gallbladder containing stones, one or several of which, for some cause, enter the opening into the cystic duct. The result in the latter is an attempt on the part of the gallbladder to propel the stone onward, and perhaps the primary pain is due to vigorous peristalsis of this organ. Presumably either the failure of free drainage of the gallbladder or the trauma of the stone with its injury to the mucosa and interference with the blood supply of the cystic duct, or both conditions combined, results in an inflammation which spreads in the mucosa of the gallbladder and results in the distention of the organ with infected bile and, later, pus. As the infection spreads the gallbladder becomes swollen, thickened, and reddened. The infection may extend through the wall of the gallbladder and result in gangrene and perforation. The continued pain is now due to distention of the organ (for we know that the undue distention of hollow viscera causes pain), and perhaps also to the irritation of the peritoneum.

In the presence of acute cholecystitis it must be evident from the foregoing remarks that the course of the condition may vary. In non-calculous acute cholecystitis, free drainage of the products of infection may be established through the cystic duct and the attack subside; or the infection may continue, extend through the wall of the gallbladder, and result in gangrene and perforation. In acute cholecystitis associated with stone, one of three things may happen: (1) The stone impacted in the neck of the gallbladder may drop back into the gallbladder, drainage through the cystic duct is reëstablished and the attack subsides. (2) The stone entering the cystic duct is propelled in the course of time through the cystic duct, and again the attack subsides; or (3) the infection continues and gangrene and perforation of the gallbladder occur.

Just as the pathological course of acute cholecystitis varies so greatly, so do the symptoms vary tremendously. You all know the typical attack; the pain coming on acutely, located in the right upper quadrant and radiating along the right costal margin to the right shoulder blade or behind the sternum; nausea and vomiting; tenderness and rigidity of the upper right rectus muscle, and the appearance of a rounded mass below the costal margin, which is tender on pressure and which moves on respiration. There is fever and leucocytosis. There may be jaundice, but usually there is not; a chill may occasionally usher in an attack. With such characteristic symptoms and clinical findings the diagnosis is not difficult; but, as you no doubt have yourselves observed, they are not always present. In their absence, mistakes in diagnosis are not uncommonly made. I have seen a number of cases treated over a long period of time for attacks of angina pectoris because the pain radiated upward about the heart and simulated the pain of this disease, and in which a cholecystectomy for gallstones and cholecystitis completely cured the condition. Other conditions of the liver, such as luetic hepatitis, may so closely resemble acute cholecystitis as to lead to mistakes in diagnosis; and I have, myself, in one instance of this disease, operated for acute cholecystitis and found the mass which I had diagnosed as a distended gallbladder to be a gumma of the liver. Occasionally, stomach or duodenal conditions, as the slow perforation of an ulcer, may lead to symptoms not unlike those of acute cholecystitis and to the formation of a painful, tender mass below the right costal margin which simulates a distended gallbladder. Acute kidney conditions, in which a right perinephric or kidney abscess presents anteriorly,

may give rise to similar symptoms and to a mass which exactly resembles a distended gallbladder; and I have been guilty of approaching one of these through the anterior abdominal wall. In a "short-coupled" woman whose lower ribs are in contact with her iliac crests, a distended gallbladder may present as a mass under McBurney's point and be diagnosed from the symptoms as an appendix abscess. And so I could go on relating errors in the diagnosis of acute cholecystitis which we have encountered at the Cincinnati General Hospital.

From a study of our cases I would say that when the symptoms and physical signs are typical the diagnosis has usually been made; but when atypical, I have been unable to find any data in our records which will greatly aid us in our diagnosis. We must rely in the atypical cases upon our general experience in the diagnosis of acute abdominal conditions, and we may often help ourselves by taking an x-ray picture of the abdomen. Recently I was called to a distant city because of the inability of the local physicians to diagnose the condition of a patient with right upper abdominal pain, vomiting, fever, and leucocytosis. No mass was palpable about the right costal margin. An x-ray of the abdomen had not been made. My suggestion was an x-ray picture, and the film showed three or four gallstones which, from their position, indicated an abnormally placed gallbladder.

Not only is the diagnosis of this condition subject to error, but the decision regarding its treatment is open to question. I speak now of the cases in which the symptoms and physical signs are characteristic, and in which the diagnosis is reasonably certain. I am aware that there is a general attitude on the part of both physicians and surgeons to wait until the acute attack subsides, and then to proceed with surgery or not, according to circumstances. If one adopts this general attitude, he disregards the different pathological conditions which may be present, and particularly the group of cases in which a stone is firmly and immovably impacted in the cystic duct. It is in this group that gangrene and perforation of the gallbladder occur; and if we adopt a waiting policy for all cases, we should do so with our eyes open to the possibilities of this rather tragic event.

A study of our records shows that among 135 cases of gallstone disease operated upon at the Cincinnati General Hospital in the past five years there were 74 cases of acute cholecystitis and 61 cases of chronic cholecystitis with gallstones. Of these 74 acute cases, 18, or approximately 25%, were gangrenous at operation or had perforated, and three of the 18 had become gangrenous or had perforated in our own wards because of a waiting policy. Moreover, 24, or 43%, of the remaining 56 cases which were not operated upon at once but were treated expectantly failed to subside after a reasonable interval of waiting and required operation in the acute stage of the disease. The mortality from operation in all acute cases which had not become gangrenous or had not perforated was 5%; the mortality in the 18 cases which had become gangrenous or had perforated was 16%.

Of the 61 cases of chronic cholecystitis associated with gallstones, six died following operation—a mortality of 9.8%. It appears, therefore, that our mortality in operations for acute cholecystitis before gangrene or perforation is less than that in operations for chronic cholecystitis. But this is not exactly a fair inference. Our operative and autopsy records show that, of the six patients who died following operation, one had a carcinoma of the gallbladder with extension into the liver, one died a purely cardiac death from advanced myocarditis, one died with the symptoms of carcinoma and at autopsy had advanced renal disease and miliary pancreatic abscesses, one died from the effects of hemorrhage following an attempt to remove the spleen as well as the gallbladder, one died from the anesthetic upon the operating table, and one died from an unexplained cause. This last death is the only one which legitimately can be ascribed to the operation of cholecystectomy for chronic gallstone disease; nevertheless, the other five deaths followed this operation.

It will be seen from this study that the question of procedure in acute cholecystitis can not be said to be settled. We are dealing with a condition the pathological manifestations of which vary greatly. We can not surely tell what conditions are present in any given case. We know that in acute cholecystitis with stone impacted in the cystic duct the condition may not subside; indeed, not uncommonly goes on to gangrene with perforation of the gallbladder. Our experience is that gangrene and perforation occur more commonly in the old than in the young—in patients, in other words, in whom it may be more desirable to wait. We have shown that the mortality in operations performed in the acute stage of cholecystitis—provided gangrene and perforation have not occurred—is not higher than when performed in an interval; but I must add that

our experience with chronic cholecystitis has been most unhappy. On the other hand, when operation is performed after gangrene and perforation have occurred, the mortality is high. Our personal attitude, notwithstanding the general attitude to the contrary, is to operate at once or within a very short time upon those cases of acute cholecystitis which present a distended, tender gallbladder below the costal margin, and in which the symptoms indicative of a severe infection are present; and not to treat them expectantly with the idea of waiting for the attack to subside.

III. *Acute Perforation of Gastric and Duodenal Ulcers.*—I shall speak next of the acute perforation of gastric and duodenal ulcers; not because it is an extraordinarily common condition, but because it is such an important condition to recognize early. It is said to occur in 2% or less of cases of gastric and duodenal ulcer, but its true incidence is very difficult to get at. Were one to judge from the statistics of the Cincinnati General Hospital, it occurs in fully 25% of the cases; but we know this figure is far too high, because relatively few patients with ulcer enter the hospital. We have observed 88 cases of acute perforation of gastric and duodenal ulcer, and my remarks are based upon their study.

A review of the histories of these cases shows that in almost 80% there were symptoms dating from a period of three months to twenty years before perforation, which strongly suggested or made almost certain the presence of a gastric or duodenal ulcer; in about 10% indefinite and inconclusive symptoms were present, and in 10% no symptoms of a previous ulcer could be obtained. In other words, no definite history of previous ulcer was obtained in 20% of the cases, while in one-half of these perforation was apparently the first symptom of the disease. These findings suggest that we should not lay too much stress upon the absence of previous ulcer symptoms in our diagnosis of perforation of gastric or duodenal ulcer.

A review of the symptoms of perforation shows that usually they are fairly definite. In practically all the cases, perforation of the ulcer occurred while the patients were at work or engaged in some activity such as lifting, or while straining at stool or after an exceptionally heavy meal. There was no instance of perforation while the patient was lying quietly in bed. Pain, described as intense, extreme, knifelike, etc., was present in every case and occurred most often in the epigastric region (78%), less commonly in the umbilical region (7%). In 10 cases, or 11%, there was a complaint of generalized abdominal pain. Nausea and vomiting occurred in about 50% of the cases.

Of the clinical findings, shock, so often commented upon as a common finding, may either be absent or may be quickly recovered from, for it was present in only 8% of our cases on admission. I have, in several instances, observed that the shock present immediately after the accident has completely disappeared by the time the patient has reached the hospital several hours later. Abdominal rigidity, most marked in the upper abdomen and associated in 20% of the cases with a retracted abdomen, was an almost constant finding, as was abdominal tenderness. Obliteration of the liver dullness, due to air in the abdominal cavity, and dullness in the flanks due to fluid, were less frequently observed or noted; but I would urge the more frequent use of x-rays of the abdomen to determine the presence of air. The average temperature in cases which had perforated less than eight hours before admission was 98°, the pulse 91, the leucocyte count 18,900. In cases perforated 16 to 24 hours, the temperature was 100°, the pulse 98, the leucocyte count 10,000. In cases perforated over 24 hours and with general peritonitis, the temperature was 98°, the pulse 116, the leucocyte count 6,400. The most striking change in these findings is the fall in the leucocyte count with the onset of peritonitis and the rise in the pulse rate.

The picture, then, of the acute perforation of gastric or duodenal ulcer is a sudden, intense pain in the epigastrium, followed in half the cases by nausea and vomiting. If seen very early, there may be pallor and other symptoms of shock, or shock may be absent. The abdomen is rigid—more so than usually seen in other acute abdominal conditions—and may be retracted. There is abdominal tenderness more marked in the upper half of the abdomen. The temperature is normal or subnormal; the pulse is moderately accelerated and the leucocytes increased. Later, with the onset of peritonitis, the abdomen may become distended, the leucocytes drop, and the pulse becomes accelerated.

With a picture as definite as this—and our records show that it is quite constantly definite—one would expect a correct diagnosis in a high percentage of cases. Yet errors in diagnosis are occasionally made. Our records show that a correct diagnosis of the condition was made on admission in a little over 80% of the cases. The most common error was in confusing perforated ulcer with acute appendicitis,

but this condition also was mistaken for acute cholecystitis and acute pancreatitis. Less common mistakes are the confusion of lead colic and small strangulated midline ventral heria for perforated ulcer. I recall very vividly a case of both the last-named conditions in which I was on the point of operating for perforated ulcer. The patient with acute lead colic presented sudden, terrific abdominal pain, vomiting, a retracted, rigid abdomen, subnormal temperature, and a slightly accelerated pulse—symptoms which were indeed suggestive of perforated ulcer; and a case of small midline, strangulated ventral hernia similarly presented all the symptoms and signs of perforated ulcer.

When, however, we analyze the time interval between the onset of perforation and admission to the hospital, we again wonder, as we have in acute appendicitis, what is the explanation for the delay in instituting proper treatment for this condition. A study of our cases shows that 44% were admitted to the hospital eight hours or less after perforation had taken place; 16.5% between 8 and 16 hours after perforation; 16.5% between 16 and 24 hours after perforation; 22% over 24 hours after perforation. In other words, less than one-half of the cases were admitted to the hospital within eight hours of perforation, while about 40% of the cases were admitted over 18 hours after perforation. Whether this is due to the failure of the patient to call a physician, or to the failure of the physician to make a diagnosis, or to the refusal of the patient to submit to prompt surgical treatment, unfortunately can not be accurately stated from our records; but again, from conversation with patients and physicians, I gather that errors in diagnosis are not uncommon, and are, in part at least, responsible

The importance of early diagnosis and prompt surgical treatment in no other condition is better illustrated than in this group of acute abdominal conditions. Our operative records show that in all cases operated upon less than 12 hours after perforation, the mortality was 22.7%; in cases operated upon between 12 and 24 hours it was 60%, and in cases operated upon after 24 hours it was 71%. The total mortality for all cases was 33%. Not wishing to lay too much stress upon the mortality figures in so small a series, Dr. Johnston, formerly of our staff, has collected 1,500 cases of acute perforation of gastric and duodenal ulcer reported in the recent literature from various clinics throughout the country. A study of these 1,500 cases shows a mortality almost exactly that of our own; under 12 hours it was 22.5%; between 12 and 24 hours it was 55.5%, and over 24 hours it was 73.4%. Considering all the factors which go to make up the successful management of a given condition, the time element (*i.e.*, the time between perforation and operation) must, I think, be considered the most important single factor in the treatment of acute perforation of gastric and duodenal ulcer; for with a time interval of less than 12 hours an average surgeon can save about 80% of his patients, while with a time interval of over 18 hours the best surgeon can not save much more than 40%.

The operative treatment of acutely perforated gastric and duodenal ulcer perhaps deserves a few comments. The various operations which are performed are: (1) Simple closure of the ulcer; (2) closure of the ulcer combined with gastroenterostomy; (3) closure or excision of the ulcer combined with pyloroplasty; (4) pylorectomy. The choice of these various procedures, all other things being equal, depends upon their immediate mortality and their late results. But conditions are not always the same, and the choice of procedure often depends on the condition of the patient at the time operation is performed. Statistics bearing on these points are rather inconclusive. In our own experience the simplest operative procedure, simple closure of the ulcer, has been attended in all cases by a higher immediate mortality than closure combined with gastroenterostomy or pyloroplasty. In the 1,500 cases from the literature, simple closure was also attended by a higher immediate mortality than closure plus gastroenterostomy or closure plus pyloroplasty or pylorectomy. It is difficult to understand how procedures of much greater magnitude and requiring a longer time to perform could of themselves actually save more lives; and my interpretation of these statistical findings is that the patients in whom these more serious operations were performed were in better general condition or were operated upon by more skillful surgeons than those in whom simple closure of the ulcer was done. When we study the late results of these various procedures in those who recovered, we find that they also are not altogether conclusive. Such as they are, they show that following simple closure of the ulcer 24.8% of the cases reported more or less severe symptoms of ulcer, and of these 10% required or were subjected to a subsequent gastroenterostomy; following closure of the ulcer plus gastroenterostomy, 12% reported more or less severe symptoms, and of these 1.3% were subse-

quently operated upon for gastrojejunal ulcer; following closure plus pyloroplasty, 23.8% reported more or less severe symptoms; and following pylorectomy, 6% reported more or less severe symptoms. It will be seen that the operation of greatest magnitude, *i.e.*, pylorectomy, gave the best late results, and that closure combined with gastroenterostomy gave the next best results. I give the surgeons in this gathering these statistical findings without comment. I, personally, have never done a pylorectomy for perforated ulcer, and so can not speak from experience about the advantages of this procedure; but I imagine that, if generally adopted, it would lead to a high mortality. I have always used the closure combined with gastroenterostomy in all cases in sufficiently good condition to warrant this procedure, and, in my experience and in the experience of the literature available, it yields perhaps the most satisfactory immediate and late results.

IV. *Acute Intestinal Obstruction.*—Perhaps the fourth subject I should discuss is acute intestinal obstruction. As we see it clinically, we may conveniently classify the patients who present its symptoms into two groups: (1) Those who enter the hospital primarily for this condition, and (2) those who develop the condition in our hospital wards following operation for other surgical diseases.

(1) Acute intestinal obstruction in the first group follows a variety of causes. A study of 225 cases treated at the Cincinnati General Hospital shows that the causes were adhesions or bands, the result of previous operations, strangulated inguinal, femoral and umbilical herniæ, intussusception, volvulus, benign and malignant tumors of the intestine, enterolith, tuberculous peritonitis, diaphragmatic hernia, persistent Meckel's diverticulum and internal strangulated hernia. It is rather remarkable that in this not large series of cases we should have seen five cases of internal hernia.

You are familiar, I am sure, with the pathology of acute intestinal obstruction; but I wish to make some comments upon it because of my subsequent remarks on treatment. The intestine proximal to the obstruction becomes distended and its blood supply is interfered with, as shown by its turgid, cyanotic appearance. Peristalsis is at first stimulated in an attempt to overcome the obstruction, but later is more or less lost. Reverse peristalsis may ensue and is responsible for the regurgitant vomiting so often seen. If the local cause of the obstruction persists, as, for example, a tight inguinal ring, the strangulated loop becomes occluded, and swelling and edema and finally death and gangrene of the gut takes place. The vomiting so characteristic of the condition not only leads to fluid depletion, but is associated with a serious disturbance in the acid-base balance in the blood and tissue cells, manifested by a fall in the blood chlorides, a rise in the carbon dioxide combining power of the blood, and, in the terminal stages of the disease, by a rise in the non-protein nitrogen of the blood. When death of tissue occurs, as in gangrene of the bowel, there is added a protein intoxication. It has been supposed that there is formed in the obstructed bowel a toxin, more virulent or in greater amount in the high intestinal loops than in the low, the absorption of which causes some of the serious manifestations of the disease and the eventual death of the patient; but recent experiments, some of which are at present being carried on in our laboratory, seem to throw some doubt upon this theory. I shall not at this time go into this phase of the question, for it is not yet sufficiently clarified to warrant a discussion; but I shall go on with the symptomatology of the disease.

The symptoms of intestinal obstruction, as may be imagined, vary greatly with the conditions present (*i.e.*, whether the obstruction is incomplete or complete, high in the intestinal tract or low, and associated or not with strangulation and gangrene of the bowel. The clinical symptoms which intestinal obstruction calls to our minds are cramplike, most severe at first but tending to lessen as paralysis of the bowel occurs; vomiting, first of the stomach contents, later of the upper intestinal contents, and finally fecal; abdominal distention, gradually increasing, sometimes associated with abdominal tenderness but not with abdominal rigidity; failure of the bowels to move spontaneously or with enemata; a normal or subnormal temperature; a slightly accelerated pulse and an increase in the leucocyte count. As the disease progresses the pulse becomes rapid and weak, the blood-pressure falls, and death ensues. This is the picture which intestinal obstruction often presents and we are still further assisted in our diagnosis by the history of a previous operation and the presence of an operative scar; by the obvious presence of an irreducible inguinal, femoral or umbilical hernia; by the presence of a stricture or mass in the rectum, etc. But, occasionally, variations in the picture occur, and I shall briefly consider some of them.

(*a*) High intestinal obstruction—and by this I mean obstruction of the lower duodenum or upper jejunum—is one of the varieties in which errors in diagnosis are prone to occur. It may be caused by

bands, by adhesions the result of infection, by tumors, by an intussusception of the small bowel, by internal herniæ into Treitz's fossa, etc. The symptoms are cramplike abdominal pain, vomiting, a normal or subnormal temperature, an acceleration of the pulse, and a leucocytosis. The abdomen may fail to present even the slightest distention; indeed, may be quite flat, and palpation may be negative. Efforts to evacuate the bowels apparently may be quite successful for 24 hours or even 48 hours, for the enemata given empty the bowel below the obstruction. The confusing elements here are the absence of abdominal distention and the apparent absence of obstruction because the bowels move. In two recent cases of this sort we were greatly aided in our diagnosis by fluoroscopic and x-ray examinations of the abdomen after giving barium by mouth. It was shown that the barium passed through the pylorus, but stopped at a certain point in the upper intestine; and this point proved at operation to be the site of the obstruction. In high obstruction due to herniation of the small bowel into Treitz's fossa there may be, in addition to the symptoms above noted, the appearance of an ill-defined mass which sometimes helps in, but may also confuse still further, the diagnosis.

(*b*) Other internal herniæ besides those in Treitz's fossa, volvulus, intussusception in adults as well as in children, and diaphragmatic hernia all occasionally give rise to confusion in diagnosis. It will be impossible, in the time at my disposal, to go into the symptomatology and clinical manifestations of these conditions; and I can only remind you to think of them when confronted with a patient with symptoms of intestinal obstruction in whom there are no external findings such as scars, herniæ, etc., to indicate its cause. I would also remind you to make more frequent use of the fluoroscopic and x-ray examinations, for they often will be helpful in establishing a positive diagnosis, or, if not, they will serve to exclude certain conditions from consideration.

When we come to study our own cases we find that there has been a long delay in instituting proper treatment, for our records show that the time interval between the onset of symptoms and admission to the hospital averaged 3.2 days (exclusive of strangulated hernia). Again I am unable to state accurately whether this interval was due to the failure to call a physician or to the failure of the physician to make a prompt diagnosis or the refusal of the patient to submit to prompt surgical therapy after the diagnosis has been made. But here, as in acute appendicitis and perforated ulcer, I know that errors in diagnosis played a part, and, to the extent that they contributed, they were in part responsible for the high mortality in this disease. It becomes evident, from the study of any considerable series of cases of acute intestinal obstruction, that the mortality in this disease is dependent to a very considerable degree upon the time element—the elapsed time between onset of symptoms and operation—just as it is in acute perforation of gastric and duodenal ulcer. Of 79 cases in which the obstruction was due to causes other than strangulated hernia, 22 were operated upon under 48 hours from the onset of the first symptom with a mortality of 18%; 15 were operated upon between 48 and 72 hours with a motrality of 33%; 15 were operated upon between 3 and 4 days with a mortality of 60%, and 27 were operated upon after 4 days with a mortality of 81.5%.

Of 144 cases in which the obstruction was due to strangulated inguinal, femoral and umbilical hernia, 77 were operated upon under 24 hours with a mortality of 3.6%; 27 between 24 and 48 hours with a mortality of 7.4%; 25 between 2 and 4 days with a mortality of 28%, and 15 over 4 days with a mortality of 40%.

There are, in my opinion, more chances of serious errors in surgical judgment in acute intestinal obstruction than in perforated ulcer—errors which undoubtedly contribute toward the mortality in this disease; but the statistics I have just quoted emphasize how important prompt relief of intestinal obstruction is. I wish to emphasize the point, as I did in acute perforation of gastric and duodenal ulcer, that no surgeon, however good, can achieve satisfactory results in the late stages of the disease, for clinical experience teachers us that the profound changes characteristic of the late stages of intestinal obstruction are beyond the help that the surgeon can offer.

The errors in the treatment of the condition are, I think, chiefly due to a lack of appreciation of the chemical changes which take place, to poor surgical judgment, and to inadequate care. I have pointed out that one of the striking chemical changes which takes place as a result of the disease is the serious disturbance in the acid-base balance in the blood, as shown by the fall in the blood chlorides and the rise in the carbon dioxide combining power of the blood. Experimental evidence suggests that this disturbance, associated later in the disease with a rise in the non-protein nitrogen of the blood, is one of the most

important (if not the most important) factors in the cause of death. Dogs, for example, in which a complete intestinal obstruction has been produced, will live on indefinitely (as long as any animal will live without food or water) if these changes are prevented by the administration of an adequate amount of salt solution. Physicians generally, in my experience, fail to appreciate the importance of maintaining a proper fluid balance and the normal chemical relationships in the blood; for we find the patients admitted are in an advanced stage of dehydration and with marked disturbance in their blood chemistry. It is obvious that, with the onset of vomiting in intestinal obstruction, large amounts—a minimum of 3,500 c.c. and preferably 5,000 c.c. per 24 hours—of normal salt solution should be given in order to prevent fluid depletion and to maintain the acid-base balance in the blood. Both experimentally and clinically the serious symptoms of the disease may be averted, for a time, at least, by the prompt use of this measure.

The errors in surgical judgment usually concern the decision regarding the operative procedure in relation to the condition of the patient. In intestinal obstruction due to mechanical causes the desire of the surgeon naturally is at once to remove the cause of the obstruction and reëstablish the continuity of the intestinal tract. The desire to accomplish the ideal operation should not be uppermost, for, if followed, it leads to some disastrous results. In the first place, many patients will not stand this ideal procedure and die quickly following it. Again the surgeon undertakes the operation upon a patient in good condition, but finds unexpected difficulties in achieving his purpose; and, instead of abandoning it and doing a jejunostomy or ileostomy, continues to follow it, to the detriment of the patient. And, third, the ideal operation sometimes fails to achieve its purpose, even though successfully accomplished; for a paralytic ileus in the intestine above the site of obstruction continues the symptoms of obstruction. In this event, an original jejunostomy instead of the ideal operation would better have served the purpose.

Undoubtedly, the ideal surgical treatment of acute mechanical intestinal obstruction is the removal of the cause, the excision of dead or gangrenous tissue if present, and the establishment or reëstablishment of the continuity of the intestinal tract. As I have stated, it is often unwise to attempt it, for the patient's condition may not permit it. Other lesser procedures then come into question, such as jejunostomy, ileostomy, cæcostomy, or colostomy. The point at which an opening into the intestine is made will depend in part upon the location of the obstruction; but the still commonly accepted idea that the opening should be made as near above the seat of obstruction as possible, and that this opening alone will always suffice must be taken, I think, with some reservations. I will agree, until more experimental and clinical data are available, that in acute obstruction of the large bowel an opening in the large bowel above the obstruction is desirable; but I would add that, if the distention and particularly the vomiting are not promptly relieved, a jejunostomy in addition should not be long delayed. But in obstruction of the small intestine the question arises whether a high jejunostomy is not preferable to an opening elsewhere, regardless of the location of the obstruction. Both experimental and clinical evidence support the view that high intestinal obstruction is the most serious and rapidly fatal type; and clinical observation suggests that the distressing, persistent and serious regurgitant vomiting and the serious changes in the blood chemistry appear most prominently with distention of the upper intestine or jejunum. A jejunostomy, therefore, offers the most direct attack upon the chief seat of disturbance, for it most quickly allows drainage from and collapse of that portion of the bowel, the continued obstruction of which is most dangerous. One might argue that the same rapid emptying and collapse of the jejunum will occur after an opening is made in the lower ileum; but this argument fails to consider the facts that the intestine following ileostomy rarely empties itself at once and that a paralytic ileus the result of mechanical obstruction may be present and prevent the intestine from emptying itself for some time. This is not entirely theoretical. I will cite an actual clinical example: Recently I saw a patient who, following an abdominal operation, developed the symptoms of obstruction. An x-ray of the abdomen showed greatly dilated loops of intestine in the left upper abdomen, *i.e.*, the position of the jejunum. A lower abdominal incision was made and the ileum found to be distended. An ileostomy was, therefore, done. For 36 hours after the ileostomy had been done the vomiting continued. I was then called and suggested another x-ray of the abdomen. A comparison of the second x-ray with the first showed that the jejunum was quite as dilated as before. Barium was then introduced through the ileostomy tube and another x-ray showed that the tube was not occluded nor was it obstructing the bowel at the site of the ileostomy. Moreover, subsequent events

proved that there was no mechanical obstruction between the ileostomy and the jejunum. Here, then, we have an instance in which an ileostomy quite failed to relieve the persistent vomiting or the distention of the jejunum for 36 hours, and, had this patient been seriously ill to begin with, this additional 36 hours of obstruction might well have caused a fatal termination.

The errors in post-operative treatment of acute intestinal obstruction are, in my experience, chiefly errors of omission. If the original operation performed for intestinal obstruction fails to relieve the symptoms of obstruction, a high jejunostomy may be considered a form of post-operative treatment and may be too long delayed. If done after an ileostomy or cæcostomy, it has a real advantage in addition to that of draining and collapsing the distended jejunum, for it can and should be used to introduce fluids and food into the intestine, the tendency of which is to reëstablish the normal peristalsis of the bowel. Other post-operative measures which are often not sufficiently persisted in are the frequent use of the stomach tube, the administration of large quantities of salt solution, and the support of the circulation. I know of no group of cases in which persistent post-operative efforts are more richly rewarded than here.

(2) About the second group of cases (*i.e.*, those which develop symptoms of obstruction in the hospital after operations performed for other conditions) I need say only a word. The obstruction may be mechanical and incomplete or complete, or it may be due to a paralytic ileus. In speaking of the complications following operation for perforative appendicitis, I referred to its symptoms and urged that a high jejunostomy be performed to relieve them. I have just given some reasons why I think a high jejunostomy is preferable to an opening elsewhere in the intestine, and in this group of post-operative obstructions it is particularly satisfactory. I would again urge that, in the presence of symptoms of post-operative obstruction, this operation be performed early; for it is better to operate perhaps unnecessarily upon an occasional case than to lose one by waiting too long. If performed according to the Witzel technique, the opening will close spontaneously; and if a pad of omentum is interposed between the bowel and the abdominal wall at the time of operation the post-operative adhesions which may result are perhaps of small importance.

I had intended to speak briefly of acute pancreatitis, which, in our experience, is also subject to error in diagnosis and treatment. I find, however, that the time allotted me has already passed. I have certainly said enough to indicate that acute abdominal conditions still may baffle us in our diagnosis and still require improvement in their treatment.

THE TREATMENT OF FRACTURES*

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Our present day is characterized in large part by extensive and far-reaching mechanical developments in all fields of industry. With the advent of this machine age the incidence of traumatic injury to the skeletal system has increased tremendously. Consequently, the treatment of fractures is being forced into the foreground as a highly specialized branch of surgery. This subject is of paramount importance for several reasons. We know that the loss to industry alone from poorly treated fractures is estimated at millions of dollars annually. Poor treatment maims the individual with the result that his period of disability is either prolonged or permanent. If his earning power is permanently reduced thereby, both his family and himself suffer through poverty, and, sooner or later, appeal to charity for aid. Secondly, there is an unnecessary loss of life from inadequate and improper treatment in compound fractures or open reduction in the hands of the unskilled, untrained surgeon. There are a large number of law suits passing through our courts which could have been avoided had proper treatment been given.

In the past we have been satisfied with a functional result. Today, with the x-ray, fluoroscope, and modern standard bone technique at our command, we must strive for anatomic perfection, and when this is attained we will have functional perfection.

If a fracture can not be reduced to a position of anatomical correctness by closed manipulation, then that case should most certainly have an open reduction. If the case is in the hands of a competent and trained surgeon who is equipped with all the necessary armamentarium and possesses a knowledge of the proper operative procedure to be used in each individual case, restoration of normal function will be obtained in a large percentage of cases. By insti-

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tution of strict aseptic operative technique, sepsis, the "bugaboo" of bone surgery, will be eliminated.

Every fracture presents a different problem and should be studied just the same as any other major operative procedure. The question may then be asked, "When should a fracture be reduced?" The reduction of a fracture should be carried out immediately. Every hour or day that it is postponed adds to the difficulties of reduction and to the hazards of the final end results. Immediate reduction lessens the patient's pain, reduces the possibility of secondary nerve injury, hastens the return of normal function of the part, increases the patient's coöperation, and shortens the period of disability.

Certain types of fractures should always be treated by open reduction: (1) Fracture of the head of the radius with displacement; (2) transverse fracture of the patella with separation of the fragments; (3) fracture of both bones of the forearm that can not be anatomically reduced by closed manipulation; (4) fracture of the olecranon process with separation; (5) fracture of the condyles of the humerus and femur with wide separation; (6) certain fractures of the os calcis; (7) certain fractures of the anatomical neck of the femur. In these cases there is no cause for delay. Operative procedure should be carried out from seven to ten days following the accident.

It is our practice to x-ray all fractures before reduction and immediately after reduction. This is repeated after one week, and thereafter every two weeks until the cast or splint is removed. It is not an infrequent occurrence for a fracture to become partially or completely displaced, even after callous formation is fairly well advanced. These pictures are always taken in both the anteroposterior and lateral views. I very frequently see patients that have a poor result, not because the reduction was incomplete but because the fracture had become displaced after the reduction and splinting. This mishap could have been corrected in time if the attending physician would have had pictures taken at frequent intervals to check up on the position of the fragments.

In speaking of the treatment of fractures, we must always consider the possibility of delayed union or non-union. I do not believe that the etiology of non-union can be credited to any one condition, but is rather the result of several factors, most notably: (1) Destruction of periosteum and interference with the blood supply of the tissues caused by rough manipulation and unnecessary trauma at the time of operation; (2) too tight application of external fixation, interfering with the blood supply; (3) frequent attempts at closed reduction over a period of several weeks; (4) inadequate fixation and splinting; (5) comminuted fractures interfering with the blood supply of the bone itself; (6) internal glandular disturbance, interfering with the calcium and phosphorus content of the blood; (7) interposition of soft tissues between the fragments. If we bear these factors in mind when we are reducing a fracture, I believe that many cases of delayed union and non-union can be avoided.

It might be wise to consider briefly the various types of anesthesia that may be used. We prefer spinal anesthesia, preferably spinocain according to the method of Pitken, in reduction of fractures of the lower extremities. We feel that this gives us better relaxation than any other anesthesia. Nitrous oxide anesthesia combined with morphia is preferable in fractures of the upper extremities. If for any reason this is contraindicated, local anesthesia gives admirable results. We use from 30 to 60 c.c. of 2% novocaine injected directly into the hematoma at the site of the fracture.

The most notable advance in recent years in fracture surgery has been the treatment of compound fractures. Briefly, we consider a compound fracture as much of an emergency as an acute appendix. Treatment is instituted immediately upon the patient's admission to the hospital, regardless of the hour, day or night. X-ray examinations are made immediately to ascertain the extent of the fractures. From the x-ray room the patient is wheeled to the operating room. If, for instance, the fracture is of the tibia, the patient is placed on the fracture table and anesthetized. The part is shaved, cleansed with soap and water, followed by ether, iodine, and alcohol. The patient is draped with scrupulous care. All unnecessary movements of the fractured extremity are avoided. Debridement of all devitalized tissues is then done. All small, loose fragments of bone are removed, and if the ends of the bones are soiled these are cleansed with ether and iodine. The fracture is then reduced by gentle manipulation and traction. If the wound is not of sufficient size, we lengthen it by incision. If internal fixation is necessary, we do not hesitate to use steel plates or a Parham band. Where the loss of cutaneous tissue is extensive, we pack the wound and let it heal by granulation, keeping it clean by irrigation with ½% sodium hydrochlorite solution. Otherwise, we close the wound as in a clean case, no

drainage being used. A plaster cast is then applied and a window cut out overlying the wound. Primary union will occur in a majority of the cases. The patient usually has a few degrees' elevation of temperature the first three or four days, but this soon subsides and is of no serious consequence. By use of this method of treatment we feel that the incidence of infection is markedly diminished. We shorten the period of disability, reduce the fracture with ease and safety, and can assure the patient of a good anatomical functional result. If internal fixation has been used, we prefer to remove this as soon as the x-ray reveals sufficient callous to hold the fragments.

In treating industrial fractures we very frequently meet with cases of "compensationitis." Unquestionably, employers and industrial commissions pay thousands of dollars to undeserving patients. We must always be on the alert for such cases and coöperate with the industrial organizations in getting these people back to work.

Since there are more legal procedures in cases of fracture than any other surgical procedures, I think it is wise that we should say a few words in regard to this subject. When a patient is examined because of a poor result obtained by another surgeon, one can not be too careful of his conversation. It takes only a few words for the patient to grasp the idea that he has been improperly treated and he will be prone to start court proceedings against his former physician. We do not know the conditions under which the former physician was called upon to treat the patient, and it is perfectly reasonable to assume that everything possible was done. It is just as easy to assure the patient that this was the case and that his result was as good as could be obtained under the conditions existing at that time. If the condition can be improved, this advice can be given and the relation to the patient has not been injured. In so doing we have done the other physician a justifiable act of kindness.

In case of legal procedure, the physicians who are to give medical testimony for the plaintiff and the defendant might well review the findings of the case together and attempt to agree upon the testimony to be given. This measure would minimize the possibility of conflicting medical testimony. What impression is made upon the lay mind when two equally well trained and brilliant physicians offer conflicting testimony in a given case? The medical profession might well be spared this undesirable and embarrassing situation if a measure like that mentioned above were adopted. In such a manner, unbiased, honest medical testimony would be offered.

In conclusion, the present-day treatment of fractures occupies a very important position in modern surgery. The basic principles are fixed, although the avenues of approach to attain these results may vary. By following out the common-sense principles as we know them today, our results will be gratifying. To ignore them is criminal.

COLLES' FRACTURE: DIAGNOSIS AND TREATMENT *

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Colles' fracture, as first described by Colles, is typically a fracture of the last one inch of the radius at the wrist and usually impacted. With the rapid development of gasoline-driven machines and the complicated machinery used in industrial plants, fractures in or near the wrist are very common. They are equally disabling if not properly diagnosed and treated. This fracture is common in adults and unusual in children. The most frequent cause is a fall upon the outstretched hand. The cranking of a car may be the cause of a violent twist of the hand backward, producing a clean, transverse fracture at the lower end of the radius close to the joint and without impaction.

In all injuries of the wrist, the normal anatomical relations should be studied upon the uninjured wrist before a careful examination is made of the injured one. Look at the normal wrist from the dorsal and volar surfaces and the lateral and medial sides. On the volar surface, the base of the thenar eminence is lower than that of the hypothenar eminence. On the posterior or dorsal surface the styloid process of the ulna is very prominent with the marked depression below it. On the lateral or radial side is seen a curve running backward on the anterior surface of the radius. This marks where the base of the styloid process of the radius joins the shaft. On the medial or ulnar side are seen on the dorsum of the wrist not only the styloid of the ulna and its associated depression but the hollow above the prominence of the hypothenar eminence. Feel the normal wrist both in supination and pronation. In supination and pronation, the tip of the styloid process of the radius is lower than the tip of the styloid process of the

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From the Montgomery Clinic, Montgomery, West Virginia.

ulna. With the above-named outlines of the normal wrist, the relative positions of the styloid processes of the injured wrist should be ascertained by grasping the injured wrist with both hands and palpating the processes with the ends of the fingers. This palpation should be done very gently. The movements of the normal wrist and forearm should be noted. Pronation, supination, flexion, extension, abduction and adduction of the forearm and hand should be carefully performed. This gives us knowledge with which we can compare the injured wrist.

Anatomically, there is a thinning out of the cortical portion of the radius near the wrist, producing a cancellous, brittle bone that increases with age. Therefore, Colles' fractures are more prone to occur in the aged. In Colles' fracture th wrist appears unnatural. The thenar eminence of the thumb is higher near the wrist as compared with the hypothenar eminence. Anteriorly, posteriorly and laterally there is usually a greater or lesser degree of deformity. This deformity is a rotation deformity with a supination of the radial deformity around the head of the ulna, tearing off the styloid process of the ulna and allowing the head of the ulna to drop down into the palm of the hand. This results in a tearing of the radio-ulnar ligaments. The posterior deformity is produced by the projection of the upper end of the lower fragment toward the dorsal surface of the wrist, carrying the extensor tendons backward. Impaction of the radial fragments may be the cause of the deformity. This deformity is spoken of by the older surgeons as a "silver-fork deformity" caused by the destruction of the lower anterior arch. The lateral deformity is caused by impaction of the radial fragments, lateral displacement of the lower fragments, and the rupture of the inferior radio-ulnar ligaments. This deformity produces a widening of the wrist that must be corrected. The mechanism of this deformity may be described as follows: With a raising upward of the lower end of the radius, the ulna remaining intact and displaced downward, thus rupturing the inferior radio-ulnar ligament, which allows the lower end of the ulna to move downward into the palm, while the lower end of the radius moves upward and back. It is the ulnar head that we palpate on the flexor side of the wrist.

With the above-mentioned deformities, the normal relations between the styloid processes no longer exist. The styloid process of the radius is higher than normal and may be on the same level or even higher than that of the ulna. Thus, the disturbance of the normal relations of this all-important joint explains a great part of the final, partial, permanent limitation of pronation and supination seen in improperly reduced Colles' fractures.

Palpation over the joint elicits pain. Due to impaction, crepitus is rarely obtained. It is possible to have a Colles' fracture with the wrist appearing not very unnatural. The normal relation may not be disturbed. In such cases the diagnosis is made only by the x-ray. A sprain of the wrist may occur, but is rare. There usually exists in the so-called "sprained wrist" a definite anatomical lesion of bone. The distention of the synovial sac on the dorsum of the wrist joint produces a deformity that may simulate a Colles' fracture. There is pain over the distended sac, but very little, if any, over the radius on deep palpation. The remaining positive signs of a fracture are absent. Dislocation of the wrist backwards is rare, but when it occurs the normal relation of the styloid processes are maintained. The deformity on the dorsal surface is lower down, and this deformity disappears when traction is made on the hand plus pressure downward on the dorsal prominence. Fractures of either of the shafts or both shafts low down can simulate a Colles' fracture, but other positive signs are absent. The x-ray determines the exact seat of fracture. Preternatural mobility and crepitus in these cases are readily obtained.

In epiphyseal separations, the volar swelling is more prominent, while in Colles' fracture the dorsal swelling is more prominent. Many cases of epiphyseal separation have been diagnosed and treated as Colles' fractures. A fracture of the scaphoid bone or a dislocation of a carpal bone may occur in conjunction with a Colles' fracture and should be easily recognized. There is an unusual type of fracture that is called a reversed Colles' fracture. In this the lower end of the proximal fragment of the radius is displaced dorsally and downward, while the proximal end of the lower fragment is displaced anteriorly and upward. This is very rare and usually comes to an open reduction.

All injuries in and about the wrist should be given the benefit of an x-ray examination to rule out all the possibilities of a fracture. Since the advent of the x-ray, Coles' fractures are more frequently diagnosed and are more intelligently treated than before. Even with the accessibility of the x-ray, too many Colles' fractures are being undiagnosed and are improperly treated, with a resulting deformity of the bone, widened wrist, partial limitation of motion with pain, all of which give a partial permanent disability.

The ordinary uncomplicated Colles' fracture should be so treated as to completely overcome any disability. The treatment should be considered under reduction, immobilization, and after-care. Reduction should be done immediately or as soon thereafter as possible. This should be done under a general anesthetic always, unless the patient's physical condition will not permit. Very great force is required to give complete reduction of impacted fractures, and it is too little force that often gives us a slight bony deformity after the fracture has healed. With the patient completely anesthetized, the operator grasps the hands as in the act of shaking it, the other hand being used to stabilize the upper fragments. With gentle traction on the lower fragments, the impaction is overcome by hyperextending the wrist. After overcoming the impaction, the fragments are freely movable and crepitus should be elicited. If crepitus is not obtained, the impaction generally has not been broken up. Then, since the deformity is a rotation deformity around the head of the ulna in a supination position, this is overcome by pronating the distal radial fragments by rotating it around the ulnar head, which is used as a pivot. As this pronation is being done, a lifting and pushing backward on the ulnar head should be carried out to overcome its slump or dislocation forward. Unless this is done, the reduction is unsuccessful and will give a widened wrist with possibly pain and a disability due to a flopping ulna.

With the deformity corrected, the wrist should be flexed so that the reduced fragments can be held in position by nature's permanent posterior ligamentous and tendonous splints. Cotton, of Boston, states that a rotation of the radius around its longitudinal axis in extreme pronation with the head of the ulna fixed is a constructive contribution to the method of reduction of Colles' fractures. With the reduction complete, allow the hand to rest naturally without support to see whether there is a recurrence of the deformity. If not, the fracture should be immobilized. If there is a recurrence, the direction of the deformity should be noted and the wrist padded in such a manner that this will have no tendency to recur. Immobilization should be carried out by the simplest splint possible. If there is considerable swelling around the wrist joint in a large, muscular individual, it is best to use two small pieces of thin board for the anterior and posterior surfaces. In the application of these splints the wrist should be well padded and a small piece cut out from the dorsal splint where the lower end of the ulna touches it. This will prevent an absence of the ulnar prominence by undue pressure (Poole). This dorsal splint should extend from near the metacarpo-phalangeal joints well above the middle of the forearm. The same is true of the anterior splint. A pad should be placed under the radial arch and one on the dorsum of the hand. Usually these splints may be made out of plaster of paris, or a circular plaster-of-paris bandage may be used. Whatever immobilization material is used, it should be so arranged that it can be easily removed. I prefer plaster-of-paris bandages circularly arranged and bivalved.

The after-treatment should center around early active motion and massage. The patient should be seen daily for a period of two or three weeks. After the first twenty-four hours the dorsal splint should be removed, care being taken not to disturb the fracture, and the entire hand and forearm should be bathed in alcohol and gently stroked with the hand to assist nature in overcoming the edema and ecchymosis by increasing the venous and lymphatic flow. Stroke the hand and forearm toward the body always. After forty-eight hours the anterior splint should be removed, the dorsal splint being left intact, and the same procedure as on the preceding day should be executed. At the end of seventy-two hours both splints should be removed and the hand and forearm bathed gently in alcohol and very gently massaged. At this time, with the wrist protected, the patient should be allowed to flex and extend the fingers, this being done very gently. This process is carried out daily until the end of seven days, at which time the dorsal splint is allowed to remain off. At the end of this time the wrist is flexed very gently. All the active and passive motions are gradually increased until fourteen days, at which time the anterior splint is taken off and the wrist supported with a tongue depressor splint held on by adhesive. At the end of twenty-one days the tongue depressor splint is taken off and the wrist supported for another week with adhesive plaster. The patient is given instructions to gradually begin using the arm. This adhesive strapping may be supplanted by a two-buckled strap wristlet. At the end of four weeks all protection is suspended and the patient instructed to use the hand as before the injury.

Some Colles' fractures may have to be opened before they can be reduced. Especially is this true in the case of reversed Colles' fracture. If an open reduction is done, the after-treatment is the same as a closed reduction. The prognosis and end results depend upon the age, physical condition, type of

reduction, and the after-care. In elderly people, swelling will persist longer than in the young. A functionally useful wrist joint and hand should follow a simple, uncomplicated Colles' fracture—that is, in healthy, young individuals.

Tenderness may persist over the styloid process of the ulna for several weeks or months. Pronation and supination may be limited for several months. Especially is the supination and pronation limited if the line of fracture involves the sigmoid cavity of the radius, due to the involvement of the inferior radio-ulnar joint. Supination—the last movement to be recovered—can partially be explained by this: If the lower end of the radial fragment is partially destroyed, it may be impossible to reduce the wrist to its normal shape, thus giving a permanent bony deformity. This deformity, however, is not incompatible with a functionally useful arm. Complete reduction of the ulnar displacement may be impossible, and the head of the ulna can not be seen on the back of the wrist. This uncorrected luxation of the ulnar head may cause a weak wrist, pain over the ulna, and a disappearance of the ulnar prominence. Slight widening of the wrist does remain after most Colles' fractures and may be a source of pain. Traumatic arthritis will appear and complicate a simple convalescence. Marked impaction of the radial fragments may leave a floating ulnar head with a long ulna, giving a proportionate lateral deviation with deformity and pain.

In these cases the deformity can be corrected by a subperiosteal resection of the lower end of the ulna or a lengthening of the radius. Changes in the tendon sheaths and the periarticular adhesions that form in elderly people cause much more trouble in recovery than do the bony conditions. These adhesions prolong the regaining of finger movements. These can be prevented by early and persistent massages and passive motion as outlined in the treatment.

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INFANT FEEDING *

By J. D. STURGEON, JR., M.D.
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In considering the subject of infant feeding, one is greatly impressed by the number of phases to be considered, and it is with difficulty that the point of approach is decided upon.

There is but one type of food complete in itself and of a form available to the young of mammals, and that food is milk. The milk from different species of animals differs greatly in its chemical composition. It is possible, however, to feed the young of one species with the milk of another; but, to obtain a satisfactory nutritional result, it is usually necessary to modify the composition of the milk in certain particulars. The normal infant, as would be expected, thrives better on the milk of a healthy mother than on any other form of food; but with the present knowledge of nutrition and characteristics of cow's milk, it is possible to feed infants very satisfactorily by using cow's milk as a basis.

The chief reasons for the failure of artificial feeding are:

1. The use of very dilute mixtures of cow's milk, having a lower food value per ounce than breast milk.

2. The giving of too small quantities of the modified formulæ.

3. The feeding of formulæ lacking in certain essential constituents.

4. Bacterial contamination of milk.

5. Relative indigestibility of cow's milk as compared with breast milk.

The difficulties mentioned may be overcome, but there is always a greater chance for error in the case of artificial feeding.

Conceding, therefore, that breast milk is best for the infant, there are a few points generally known that I would like to emphasize.

It is possible, in more than eighty-five per cent of the cases, properly supervised, to feed infants at the breast. Many infants are unnecessarily weaned because of minor complaints, and without definite indications for weaning. If a baby does not do well on the milk of the normal mother, it is almost certain that the baby will fare worse on any form of artificial feeding. There are only two absolute indications for early weaning. They are the inability to obtain breast milk, and active tuberculosis in the mother; but there are other conditions where weaning is an advantage to mother or child.

A mother with active tuberculosis should not nurse her baby, nor should she come in contact with the infant in any way. If the mother is going to care for the baby, then she might as well nurse it, as far as the baby is concerned, for the infection of

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the child does not occur from the milk but from contact and atmosphere.

A mother with a chronic wasting disease, such as cardiac disease, carcinoma, severe nephritis, etc., will be harmed by nursing, due to the drain on an already overtaxed system. The milk may not harm the baby, except that it may be of such poor character as to do the baby little good. An infant should not be nursed at a breast which is the seat of mastitis. Diabetes is no indication for weaning, as diabetics often do better while nursing a child.

In acute illnesses of the mother, babies should be weaned temporarily; the breast should be pumped, but the milk should not be fed to the baby while fever is present. In long illnesses, such as typhoid fever, it is better to wean permanently.

After an operation, wait for 24 to 48 hours for ether to be eliminated and the patient to react. If infection is present, then the interval should be governed by its severity. Menstruation is no indication for weaning. In pregnancy, the milk is not poisonous; but, ordinarily, the baby should be gradually weaned, due to the strain on the mother. If the baby is very weak and the mother very strong, it is better to continue breast feeding.

In diphtheria, erysipelas, and typhus fever, the chances of infection are so great that weaning is advisable. As to the infectious diseases there are different opinions, but generally it is thought safer to wean, at least temporarily. A child of a syphilitic mother should be nursed. Certain complications incident to pregnancy and labor, such as puerperal convulsions, septicemia, eclampsia, and post-partum hemorrhage, are not absolute indications for weaning. The need must necessarily be dependent on the severity and duration of the disease.

Conditions such as colic, occasional regurgitation, curds in the stools, frequent stools (four or five daily), irritation of the buttocks, development of feeding rash, stationary weight for a few days, crying in the infant that is doing well, the milk appearing watery, the mother getting nervous or gaining weight, are not good reasons for weaning. Some of the above complaints are, however, indications for supervision and possibly complementary feeding.

If there is an insufficient amount of milk, which can be determined by weighing the baby before and after nursing for several days, then averaging the amount, it may be necessary to attempt to increase the milk supply. The amount of milk is increased by the stimulation of nursing ,by being sure that the breast is completely emptied, by nursing at regular intervals and never oftener than every third hour. If necessary, nurse both breasts every three hours, and if the breasts are not completely emptied by the infant, then do so mechanically. Adequately feed the mother, but do not attempt to stuff her. Give her plenty of exercise and rest.

If these procedures do not increase the milk to the required amount, give a bottle after the breast (a so-called complementary feeding), and not in place of the breast (a supplementary feeding). Frequently a mother's supply is quite adequate during the early part of the day, but, due to fatigue, the supply will diminish in the late afternoon and evening, and it may only be necessary to give a bottle after these feedings.

As I said before, eighty-five per cent of infants can be fed by breast; but, actually, a great many less than that per cent are fed thus. Therefore, there are many which must be supplied with food from another source.

The most satisfactory substitute for breast milk is a modified cow's milk. In a general way, it may be stated that the requirements of feeding in any infant are four:

1. Sufficient calories.
2. Sufficient protein, carbohydrate, mineral salts, water, and vitamins A, B, C, D. Sufficient fat and pigment are desirable, but not absolutely essential.
3. There must be no harmful bacteria present.
4. The food must be digestible.

In practically all instances, failure in infant feeding can be traced to a disregard of one or more of the four essential qualifications mentioned.

During the first year the infant should receive an average of 100 to 110 calories per kilogram (45 to 50 calories per pound) per day. This calculation is based on the average or expected weight for the age. If a child is underweight, it should have more than 50 calories per pound. For example, for an infant five months of age weighing only 10 pounds, the formula should be computed on the normal weight of 15 pounds rather than the actual weight of 10 pounds. He, therefore, would need 750 calories per day instead of 500 calories. This may have to be reached gradually. A large, fat baby that is overweight will require fewer calories per pound.

The average caloric values per ounce of the various foods used are:

Whole cow's milk, 20 calories; skimmed cow's

milk, 10 calories; breast milk, 20 calories; sugar, 120 calories; starch, 100 calories.

The average protein need of infants on cow's milk is 1.5 grams per pound of body weight. The protein requirements are met when the infant receives about 1½ ounces of cow's milk per day per pound. This is about ten per cent of his expected weight. He can get along on somewhat smaller amounts—about one ounce per pound—or he may be able to use a moderate excess of the 1½ ounces per pound, especially if the infant is underweight. Protein is needed for both growth and repair. A too small amount of protein will cause a water-logged baby, as is seen when fed on sweetened condensed milk.

The carbohydrate intake is a very important factor in an infant's formula, yet it is one of the most often abused. In general terms, an infant should receive about 1/100th of his body weight in carbohydrates per day, or 15/100ths of an ounce per pound. Part of this will be in the milk; the remainder must be added. The amount added depends on two factors—the age and weight of the baby, and the type of sugar used. The average amount used is one-half to three ounces per day. Another way to state the amount is: One ounce of carbohydrate for each ten ounces of milk used. In percentage it should not exceed 7% of milk sugar and 10% of malt sugar.

I would like to take a moment to discuss the various sugars or carbohydrates used in formulæ and their advantages and disadvantages.

Lactose or *milk sugar* is most often used, but is not the most satisfactory sugar. It is more laxative than other sugars, causing diarrhea frequently, due to the fact that it ferments quickly and is absorbed slowly. It therefore lies in the upper bowel, to be acted upon by bacteria. It causes a hypertonic solution above 7%, thus acting as a cholagogue. It is expensive, without advantages.

Saccharose or *cane sugar* does not ferment as quickly as lactose, but more so than some other sugars. It is digested slowly, but is absorbed more rapidly than lactose. It is inexpensive and serves well in formulæ.

Malt preparations are prepared by hydrolyzing starch by dilute acids or by the malt enzyme diatase, producing the two sugars *dextrin* and *maltose*.

Dextrin is not easily fermented. It is slowly but completely digested, and is less likely to lead to diarrhea than most other forms of carbohydrates. In cases of diarrhea, dextrin is a valuable sugar.

Maltose is readily fermented, but is also quickly digested and absorbed. It is more laxative than dextrin, but is less likely to cause severe diarrhea than either milk sugar or cane sugar. Pure maltose is not used in infant feeding, but mixtures of various proportions of maltose and dextrin are in common use. The liquid mixtures are: Borcherdt's malt soup stock, maltine, malt soup extract, etc. These are often added for their laxative effect. The common dry forms are: Mead's dextri-maltose, which contains more dextrin than maltose, and Mellin's food, which is more maltose than dextrin.

Glucose is readily fermented, but is quickly absorbed and rarely causes diarrhea unless used in excess. It is not used pure in formulæ, as a rule.

Commercial corn syrup is a very satisfactory, cheap and safe sugar to use. It contains dextrin 55%, maltose 25%, glucose 15%, and cane sugar 5%.

The reason mixed sugars are more readily tolerated than a single sugar is that the intestinal bacteria present may be capable of fermenting one sugar and not another.

Starch does not readily ferment in the intestinal tract, and is, therefore, a valuable food for infants having a tendency to digestive disorders. This is more advantageous after the sixth month, but may be used before the second month.

The next requirement of a complete diet is mineral salts. With the exception of iron, they are supplied in the amount of milk used to meet the protein requirement.

Infants' water requirement is from 10% to 15% of the actual body weight, or from two to three ounces per pound per day, three ounces per pound for the first three months and 2½ to 2 ounces afterwards. Most of the water requirement is met by the milk, but when it is not, water is added to the formulæ. This dilution is usually necessary when sweet cow's milk is used. An excessive dilution may lead to underfeeding.

The vitamin content of the milk used supplies sufficient fat-soluble A and water-soluble B, but not necessarily enough C and D. It is, therefore, advisable to give all artificially fed babies cod-liver oil and orange juice or tomato juice daily. Cod-liver oil should be dispensed with during the hot summer months.

The amount of fat in the cow's milk mixture is within the limits of the capacity of digestion of normal infants. There is no need for use of cream or top-milk mixture, and skimmed milk is seldom

necessary in normal infants. Infants vary greatly as to their ability to assimilate fat. Most infants are able to digest well 1.8 grams of fat per pound, the amount present in 1½ ounces of milk with a 4% butterfat. Since the law requires milk to contain a minimum of 3½% fat, this amount is more often present than the higher figure.

To prevent bacterial contamination, all milk used in infants' formulæ should be boiled. This practice should be continued until the infant is eighteen months of age, irrespective of whether pasteurized or even certified milk is used.

I feel that herd milk from a large dairy is better than milk from a few cows, since it will be more uniform in content. The digestibility of cow's milk is less than that of human milk; therefore, it is necessary to dilute cow's milk according to the age of the child and the caloric value required. This is partly due to the high buffer content of cow's milk. We consider that an infant one month of age is capable of digesting one-half as much cow's milk as human milk. The cow's milk is then diluted with equal parts of water and given to the stomach capacity. This point of digestibility is taken care of by the proportion of milk to weight.

The pigment contained in green vegetables is the most available form. It is utilized to build up hemoglobin. After the sixth month the infant should be given a green vegetable, preferably spinach.

After this age one or more articles of food, other than the formula, should be added monthly. There are several advantages in giving an infant a variety of foods—one is to supply the various minerals and vitamins as well as calories, and another advantage is the cultivation of taste for the different foods.

In these remarks I have named and endeavored to explain the four qualifications of a complete formula for a normal infant. I hope these will not only be an aid in constructing a formula, but also in analyzing the various proprietary products as to their qualification for a complete food.

The objection to simple milk dilution formulæ that is often raised is the inability to obtain good milk in certain localities. For this reason, proprietary products are often ordered by the physician or tried by the parents. This objection can be overcome by using a condensed, unsweetened milk, or a powdered whole milk such as Klim. When properly mixed, either gives whole sweet milk.

In practically all difficult feeding cases, the history of having used sweetened, condensed milk is present. Analysis of this shows its unfitness in the fact that it contains 53% sugar, and, when diluted, gives a very low protein content.

Infants take this food rather well because it is sweet. The parents like it because constipation is not present; but, rather, looseness of the stool is the rule. The infants gain weight rapidly. This weight is not normal, but is largely water that is stored to hold the sugar in the tissues. These infants stand even mild infections badly and lose weight rapidly when ill. The development of bone and muscle is often defective. This is the type of child that becomes emaciated very quickly with so-called summer complaint.

The time allotted for this paper does not allow for a discussion of special formulæ and procedures used in the malnourished, rachitic, athreptic, or anhydremic infant.

Some of the special formulæ which would have to be considered are: Whole lactic acid milk, buttermilk, skimmed lactic acid milk, protein milk, powdered casein additions, hydrochloric acid milk, acetic acid milk, Czerny's and Kleinschmidt's butter flour mixture, and thickened feedings.

The special procedures to which I have referred are: Forcing fluids, nasal drip, hypodermoclysis, intraperitoneal saline, intraperitoneal isotonic glucose solution, intraperitoneal Ringer's solution, hypertonic glucose by vein or glucose and insulin by vein, and blood transfusion.

In conclusion, I would like to emphasize again the advisability of breast feeding, to discourage early weaning, to advise complementary feeding when the breast supply is insufficient, to condemn sweetened condensed-milk formulæ, and to encourage the more frequent use of simple milk-dilution formulæ rather than the use of proprietary preparations.

PULMONARY TUBERCULOSIS WITH ACUTE ONSET *

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For the last three years I have been intensely interested in tuberculosis. During this time I have seen patients admitted to sanatoria with moderately and far advanced pulmonary tuberculosis, and have heard the examining physician (and I have done it myself) criticize severely the practicing physician who sent these patients in because the diagnosis had not been made earlier. In a great number of these

* Original paper.

cases the onset of the symptoms began with what the patient termed "the flu." Because of this fact, I believe the criticism was wholly unjustified and that, if the examining physician had seen the patient previous to the so-called attack of the "flu," he would have failed to diagnose the disease as pulmonary tuberculosis, because it did not exist.

Tuberculosis is different from all other infectious diseases, in that in the other infectious diseases *infection* and *disease* are synonymous terms. Not so with tuberculosis. In our attempt at early diagnosis we must distinguish between latent infection and active disease. This distinction, it must be confessed, is extremely hard to make, and, at times, requires all the diagnostic acumen of the experienced specialist.

We are taught that pulmonary tuberculosis generally begins with an insidious onset; that a few tubercles are formed in the apex of one of the lungs; that these caseate and break down, and disseminate the disease further until an entire lobe or lung is involved. This is not always true. Just as frequently the patient may suddenly become ill with a slight chill; he goes home, takes his temperature, finds he has fever, goes to bed, and calls the doctor. Catarrhal symptoms may or may not be present.

The doctor sees a case presenting symptoms of the "flu" or "grippe" and promptly diagnoses it as such. The patient's lungs reveal little or no signs. Probably in a day or two the patient begins to cough and examination reveals a bronchitis. The case is still that of the "flu." But the cough persists and the afternoon temperature persists, and the patient may expectorate a dram or more of bright red blood. Then the doctor becomes suspicious. He has an x-ray and sputum examination made, while a physical examination reveals moist râles throughout one or more lobes of the lung, always in one apex at least, and the sputum comes back positive, while the röntgenologist turns in a report of moderately or far advanced pulmonary tuberculosis. Then the doctor sends his patient into the sanatorium and the examining physician there shakes his head and laments the fact that the disease was not diagnosed earlier.

The poor patient, after spending a year or more in the "san," reading all the propaganda on early diagnosis and knowing the stage at which he was admitted, goes back home with the bitter feeling in his heart that if his home doctor had had enough brains to make the diagnosis a year or so before he did (taking it for granted the patient belonged to the annual or semi-annual examination class), the probabilities are the patient's financial and social status would have been one hundred per cent better, at least, and the prestige of the home doctor is lowered just a little in the minds of the patient, his relatives, and his friends.

The fact of the matter is the disease not only did not exist a year or so previously, but it belonged to one of those classes of cases that come on suddenly, with little or no warning, as the result of the breaking down of a tubercle, from some unknown cause, with a probable erosion of a vessel with the emptying of the contents of the tubercle therein, or a breaking down of a tuberculous gland, and, by lymphatic conveyance, a sudden and widespread dissemination of the disease took place, producing symptoms closely simulating those of influenza.

I am not contending that influenza does not activate latent foci of pulmonary tuberculosis; but I do contend that a great number of cases of pulmonary tuberculosis, the symptoms of which began with an apparent attack of the "flu," did not have influenza, but that the so-called influenza was an acute onset of pulmonary tuberculosis. Neither do I wish the reader to believe that the great number of cases developing tuberculosis following the dreadful epidemic of 1918, nor the less serious and more endemic attacks since then, with their subsequent lighting up of the tuberculous foci, were not influenza but were tuberculosis with acute onset. Nothing of the kind. My contention is simply this: That a great many patients never pass through the clinically early stage of pulmonary tuberculosis, and hence the physician is at a loss to detect the disease in this favorable early period.

NEGATIVE WASSERMANN, POSITIVE SYPHILIS *

By A. P. HUDGINS, M.D.
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Along with the development of the modern laboratory, with its accuracy and exactness in diagnosis, has come an accusation originating with the physician of the older school but carried on by those who feel guilty, that the physicians are depending too little on physical findings because of the mechanical methods available.

They would not for a minute underestimate the value of the clinical laboratory, but would urge that it be used more as a confirmatory method of diag-

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nosis, to be fitted in with the physical findings and history rather than, as often occurs, disregard the results obtained by the older methods of history, inspection, auscultation, percussion, and palpation, for the newer developments.

We should hesitate before we entirely disregard either if they are at all contradictory. Especially is this a tendency in the diagnosis and treatment of syphilis. Our methods in the laboratory with the Meinicke, Kahn and Wassermann are accurate, being reported about 94% to 96% positive in primary and secondary and 81% to 89% positive in tertiary syphilis. But even with a single negative serological examination, we should not dismiss our suspicion of luetic infection if the findings are at all conclusive. There are other methods—the spinal puncture and the provocative. But what, then, if these repeated tests are negative? The answer will come in the form of a report of several cases which have recently come under observation of the staff.

CASE I.—Male, age 25, laborer, admitted to the hospital complaining of "weakness ,fainty feelings, trembling, shortness of breath, precordial pains, nocturnal orthopnea, epigastric discomfort, headaches often." This condition had been coming on for two years, gradually getting worse. Patient was unable to work. Past history negative, except for luetic infection, 1926, at which time he received ten "shots." Physical findings essentially negative except for slight roughening at aortic area, transmitted only a short distance. Blood-pressure 145/85. Laboratory: Wassermann, blood and spinal fluid negative.

With symptoms so scattered and with so few positive physical findings to back them up, together with history of a luetic infection several years ago, in spite of the negative Wassermann the patient was put on arsenicals and observed for a therapeutic diagnosis. Improvement was reported in a short time and work resumed. (This case, by the way, had previously gone through a clinic of good standing and, apparently because of negative Wassermann, was discharged with a tonic, reporting that they could not find any trouble.)

CASE II.—O. R., female, age 52, admitted to hospital, complaining of aching under right costal border and dizziness. Further questioning brought out history of gas, nausea, vomiting, palpitation, precordial pain, dizziness, nocturnal orthopnea, edema, general aching, occasional dysuria and two or three nocturnal voidings, some difficulty in walking at night, numbness of the hands and feet. No history of luetic infection or treatment.

Physical findings: Right pupil larger than the left; does not respond to light. Left pupil responds sluggishly. Knee-jerk and Achilles reflex absent. Blood-pressure 140/90. Laboratory: Blood and spinal fluid Wassermann, negative. X-ray, stomach, 20% six-hour residue; otherwis enegative. Cystoscopic: Atonic bladder muscles; residual urine, one-half ounce.

A diagnosis of syphilis was made on absence of reflexes and general atony of smooth musculature, history of difficulty of walking at night, numbness of hands and feet, and fixation of right pupil to light. Patient was put on arsenicals and bismuth in spite of negative Wassermann. The conclusion was justified as shown by therapeutic results.

CASE III.—M. N., male, 49, admitted to hospital, complaining of weakness, more marked during past three weeks; heavy feeling about head, eyesight reported "fair" with difficulty in seeing at night. Negative luetic history.

Physical findings essentially negative, except blood-pressure slightly low (110/68) and eye-grounds. Ophthalmologist reported "degeneration of retina, suspicious of luetic condition." Retina was degenerated in patches with chorioretinitis. The optic nerve also showed signs of degeneration.

Laboratory: Urine negative; blood, hemoglobin 85%, red blood cells normal, polymorphonuclear neutrophiles 58, lymphocytes 38, basophiles 2, eosinophiles 2. Blood and spinal fluid Wassermann, negative. Wassermann following provocative arsenical, negative. Luetic history, negative.

This condition may have had as its etiology anemia or syphilis. The blood picture was not that of the former. The patient was advised of his condition and cautiously given arsenic and bismuth and eye-grounds observed. Improvement was noticed even after six days, by retinoscopic examination. This specific response rules out anemia. Even if the arsenic had acted as a tonic, the response would have been very slow—months instead of days.

CASE IV.—V. P., child, thought by parents to not be developing normally. Two years old when learned to walk; fifteen months talking; teeth at ten months; fontanels late in closing; some deafness; flat nose bridge; slight interstitial geratitis; no definite neurological signs. History of having spasms of hands and feet.

Laboratory: Blood Wassermann, negative both to cholesterinized and non-cholesterinized antigen.

Kahn test negative. Spinal fluid Wassermann, negative. Colloidal gold reading, 0000000000.

Because of the interstitial keratitis, which could not be explained otherwise, a diagnosis of syphilis was ventured in spite of the negative Wassermann. Wassermann on the father revealed a 2-plus; on the mother, negative. This seemed to clear up the situation and more or less confirmed the diagnosis. Unfortunately, further work could not be done on this case.

CASE V.—F. W., Male, age 35, entered the hospital, complaining of nervousness starting one year previously. He explained his condition as being "unbearably nervous and miserable." Patient began crying in the office while talking about his condition, although he was not the neurotic or ordinary nervous type of patient. Further questioning revealed general body pains, sharp shooting pains in legs, headaches (not constant) day and night. He was lacking his usual energy; complained of forgetfulness, and did not seem like himself. Luetic history, negative.

Physical findings: Heart, soft, blowing systolic murmur at aortic area, transmitted along aorta. Knee-jerks hyperactive. No other positve physical findings. Laboratory: Blood Wassermann 1-plus, Wassermann following provocative injection negative. Spinal fluid Wassermann, negative.

This patient was put on anti-luetic treatment and his condition cleared up. He is feeling well and is back at work.

The unusual condition in this case is the marked nervous manifestations with so slight blood reaction which did not become increased following provocative injection. Certainly one would have expected a positive spinal fluid reaction. This, too, was negative.

It is of much interest, in the cases cited, that in two particularly—the child with interstitial keratitis and the man with optic atrophy—these symptoms were the only ones after a careful and complete physical examination on which the diagnosis was made. So often, in studying a case, a list of signs and symptoms are present on which one may work and base an opinion, and usually the case discussion winds up with "blood and spinal Wassermann strongly positive." This is all very well if the serological tests *are* positive, but we should also treat the ten or twenty per cent of luetic cases which have *not* a positive Wassermann.

Certainly an interstitial keratitis in a child and a degeneration of the retina with a note "suspicious of syphilis" would justify the use of anti-luetics carefully while under observation, even though the serological tests do not reveal syphilis. One can not expect to have a veritable tabulation of all the signs and symptoms as presented in a textbook before a diagnosis is made on physical findings; but we seem to rest easily as soon as a positive Wassermann report comes in—that this is not only the etiology of the complaint for which the patient came, but also the cause of any number of other disturbances which he may have. There are signs and symptoms which can be relied upon with as much assurance as one can the Wassermann test. Often the physician has relied too much upon the reports from the laboratory, when, as a clinician, he is entitled to an independent opinion. The "therapeutic test" used in diagnosis is an efficient and dependable means of diagnosis and may be used to reach a final conclusion when the means in hand are contradictory. The fact that the medical profession has a "specific" for the treatment of syphilis makes the "therapeutic test" a "specific diagnosis."

Conclusions.—1. A diagnosis of syphilis can be made on physical findings alone, in spite of a negative Wassermann.

2. Response of syphilis in the "therapeutic test" gives a "specific diagnosis."

SIGNIFICANCE OF THE PUPIL IN DIAGNOSIS *

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In the painstaking survey of the human body in quest of an answer to the behavior of certain organs and structures or to localize the offending lesion, the pupils should not be overlooked. The pupils often have an interesting story to tell, if the story can only be interpreted, which points out the way to pathological lesions remote from the eye itself. Through the interpretation of this story, which so often corroborates other findings, many a hint to a clear diagnosis may be made.

In order to understand the various reactions of the pupil in health and in disease, it is necessary to know the anatomy and physiology of the iris.

The iris (meaning rainbow) has received its name from the various colors it assumes in different individuals. It is a curtain suspended in the aqueous humor behind the cornea and in front of the lens.

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It divides the aqueous chamber into an anterior chamber and posterior chamber. By its circumference the iris is continuous with the ciliary body, which in turn is continuous with the chorioid. It is also connected with the posterior elastic lamina of the cornea by means of the ligamentum pectinatum. In this ligament are numerous lymphatic spaces called the spaces of Fontana, which join the canal of Schlemm with the anterior chamber of the eye. The inner or free edge of the iris forms the margin of the pupil. The musculature of the iris is involuntary and consists of circular and radiating fibres. The circular fibres surround the pupil on the posterior surface of the iris. Those near the free margin form a compact band like a sphincter; those more external are somewhat separated and form a less complete circle. The radiating fibres converge from the circumference toward the center and blend with the circular fibres near the pupillary margin. The function of the circular fibres is to contract the pupil; that of the radiating fibres is to dilate it. The muscle fibres of the iris have two nerve supplies which make the study of pupillary reactions so fascinating in the diagnostic study of pathological lesions. The circular fibres are supplied by a filament of the third nerve by way of the ciliary ganglion from one of the nuclei of the motor oculi in the brain, while the dilator fibres are supplied by the sympathetic, which arises from the cilio-spinal ganglion of the cord near the first dorsal vertebra. These branches are conducted from the cilio-spinal center through the inferior and superior cervical ganglia through the carotid plexus into the skull by the gasserian ganglion and the long ciliary nerve.

To appreciate the normal light reflex action of the pupil it is necessary to understand the mechanism of the normal light reflex arc. Thus, if a beam of light enters the pupil of one eye the impulse is conducted by way of the retina and optic nerve through fibres, probably distinct from those carrying visual impulses, to the optic chiasm where the fibres undergo semi-decussation, thus passing into both optic tracts. From the optic tracts they pass to the corpora quadrigemina. Fibres from this point communicate with the oculomotor nucleus of the same side and by decussating fibres of the oculomotor nucleus of the opposite side. Thus each eye is connected with the oculomotor nuclei partly by direct fibres and partly by those fibres which have undergone a double decussation. From the ciliary nucleus of the oculomotor center the efferent impulse passes along those fibres destined to supply the sphincter muscle of the iris. Along with this bundle of fibres also pass fibres from the nuclei of the third nerve, subserving accommodation and convergence, by the third nerve, emanating in the twig forming the short process of the ciliary ganglion. From the ganglion branches are sent forward through the short ciliary nerve to the circular muscles of the iris. Thus, separate fibres, arising from separate nuclei which make up the oculomotor center and going to make up the third nerve, supply the sphincter muscle of the iris for contracting the pupil, the lens and ciliary body for accommodation and internal recti muscles for convergence. Now, if as stated above a beam of light is thrown into the pupil of one eye the pupil will contract. This is called direct reaction to light; but the pupil of the other eye will also contract, and *vice versa*. This is called consensual reaction and is important to remember when trying to localize lesions along the optic pathway. The importance of this simple test is noted when a positive direct pupillary reaction in the one eye and a negative consensual reaction in the other are obtained. The lesion is anterior to the optic chiasm.

The pupil is the circular opening through the iris for the transmission of light. It is a little to the nasal side of the center of the iris. In the fœtus the pupil is closed by a delicate membrane which begins to disappear about the seventh or eighth month of fœtal life, and at birth a few of the fragments may remain. Occasionally a few fragments of this tissue remain as permanent bands crossing the pupil and interfere with the vision of the child. The entire membrane may sometimes remain, closing the pupil completely.

The color of the pupil in health varies in different periods of life. In children and young adults it is black; in middle age it is gray-black, and in old age it appears gray.

The size of the pupils varies with age. In infancy they are contracted; in youth they are dilated; in middle age neither dilated nor contracted, and in old age they are contracted. The pupils are never seen to dilate to the maximum in health during middle life, nor do they contract to the point in the infant as in old age. The size of the pupils is influenced by light, drugs, cerebrospinal disease, sleep, coma, and death.

The independent innervation of the ciliary muscle on the one hand and the iris on the other, the cerebral connection or association between the centers controlling ciliary action and those controlling pupillary action afford a fascinating study in cases

where there is inharmonious action between the functions of these anatomical structures. Thus, we may have normal accommodation and paralyzed pupils; we may have paralyzed accommodation and normal pupils; we may have pupils contracted and fixed to light or pupils dilated and fixed to light, but which contract when the accommodation or convergence is used; or we may have both pupil and accommodation paralyzed. Each of these problems has its clinical significance and they all afford interesting and valuable information.

The most commonly known pathological pupil is the Argyll-Robertson. In this phenomenon, so commonly found in tabes dorsalis, we have contracted pupils at all times, whether in darkness or in light. The pupils do not contract to direct light, nor do they react to consensual test; but they contract still further upon the effort of accommodation and convergence. The Argyll-Robertson pupil is present in about seventy-five per cent of the cases of tabes dorsalis. It is frequently seen in paresis, but the pupils are not so contracted and are often unequal in size. The Argyll-Robertson pupil or spinal myosis may occur in paralytic dementia, multiple sclerosis, and in injuries to the spine.

Physical reflex, or cortical reflex, is a dilatation of the pupil through mental stimuli, as is noted in deep thinking, terrified, angered, or hypnotic state of mind.

Pain reflex is noted when painful pressure is made over a tender spot of the body or an inflamed area; the pupil will dilate. This is brought about by stimulation of the sympathetic nerve supplying the dilator pupillæ. Abnormal dilatation of the pupil is called mydriasis. Mydriasis may occur from anything which interferes with the pupillary light reflex arc and at any point from the retina to the oculomotor center down to the iris, such as temporary anemia of the brain, as in fainting, heart failure, overdosing with general anesthetics, oncoming death, and local conditions in the eye, such as glaucoma. Mydriasis will result from local or constitutional reaction of mydriatic drugs. It may also be noted in spinal irritation, such as the result of trauma, myelitis, spinal meningitis in the early stages, gastric and intestinal disorders, which incite unconscious states such as convulsions in children.

Miosis or contracted pupils are found in all inflammatory conditions of the eye except glaucoma, such as (1) iritis, ulcers, and abrasions of the cornea; (2) plethoric states of the brain, as acute high fevers, acute meningitis from any cause, uremia, alcoholism; (3) paralysis of the sympathetic, central, intermediate, or peripheral; (4) from certain drugs, such as eserin, physostigmin or pilocarpin dropped in the eyes; (5) poisons inwardly, such as opium, carbolic acid, creosote, pilocarpin, muscarin, etc. We must keep in mind that paralysis of the sympathetic nerve from any cause contracts the pupil to pinpoint, and paralysis of the brain or motor oculi center widely dilates the pupils; while stimulation of the spinal cord also causes dilatation of the pupils. In giving general anesthetics the anesthetist must sometimes decide whether the sudden dilatation of the pupils is due to spinal irritation from gastric disturbances by the operator or whether there is an oncoming paralysis of the brain. In suspected poison cases we must decide whether the contracted pupils are from opium or uremia.

Anisocoria is an inequality of the pupils, and may occur in healthy individuals. If not associated with pathological conditions, it may be due to (1) different refraction of the two eyes; (2) unequal illumination; (3) inequality of action as to closure of the lids. It may also be due to irritation of the sympathetic nerve by enlarged cervical glands, or aneurism of the carotid artery. In many intrathoracic and abdominal diseases monocular mydriasis may be seen. Such lesions as acute appendicitis, pleuritis, cardiac disease and empyema often produce inequality of the pupils.

Thus, one might go on indefinitely in the study of pupillary reactions in health and disease, but the subject resolves itself into understanding the phenomena of pupil contraction, dilatation and rigidity. If the mechanism of such reactions is kept in mind during the course of an examination and the pupillary findings noted, a simple hint may be had that will suggest further physical and laboratory studies sufficient to make a correct diagnosis, which is the reward of every zealous diagnostician for his labors.

THE HEART IN GENERAL PRACTICE *

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I want to take this opportunity, at the very outset, to congratulate the Davis and Elkins families upon giving to the city of Elkins such an institution as the Davis Memorial Hospital. There are not many such small communities of less than 10,000 population in

* Read at the dedication of the Golden Memorial Heart Clinic at Elkins, West Virginia, on March 14, 1930.

this country that possess this type of hospital, the modernness, equipment, and personnel of which equals that of the best hospitals of a similar size to be found anywhere in our large medical centers.

Mrs. Sarah Golden is to be congratulated upon making it possible for this community to enjoy the last word in equipment for the study of the heart. She has made it possible for the people of Elkins and the surrounding communities to be beneficiaries of that for which, up to now, they were compelled to go to the large cities. Her contribution in memory of her late husband, Dr. William W. Golden, one of the foremost surgeons of the state, superintendent and surgeon in charge of the Davis Memorial Hospital for twenty-six years, former president and former secretary of the West Virginia State Medical Association, and former president of the West Virginia State Board of Health, is an ideal one, for it represents an attempt to prevent and to give aid in heart disease, the very condition from which her husband recently died.

THE HEART IN GENERAL PRACTICE

In order to do justice to such a colossal subject, one would have to summarize a modern textbook on cardiovascular diseases. This is not my intention. I only wish to point out some of the cardiovascular problems which the general practitioner is expected to solve—mainly those problems which are usually not taken up in textbooks. Even the most specialized specialist (a two-edged sword developed by civilization), the otologist, ophthomologist, neurologist, gastroenterologist, and all the other -ologists, must invariably come in contact with patients whose symptoms originate in the cardiovascular system. One can therefore realize the great number of cardiac problems that have to be solved by a general practitioner —a man who is expected to be at least fifteen specialists combined in one.

The family physician is frequently confronted with the direct problem of whether there is or there is not anything the matter with the patient's heart. Doesn't Dr. Cabot aptly say that "most individuals inquiring about their hearts have nothing wrong with them," and would it not be just as true to say that most patients who have something the matter with their cardiovascular systems do not complain until their capacity for effort is diminished? The physician today knows that not every cardiac murmur or arrhythmia warrants a diagnosis of heart disease unless it is substantiated by additional evidence of cardiovascular pathology.

Granting that more patients who consult us are suffering with cardiophobia rather than true heart disease, isn't it equally true that they require just as much, and probably more, attention than a true cardiac? These patients often go from one doctor to another. Why? Because it frequently takes the collective explanations of many doctors to interpret the casual statement made by one which is either the exciting or the aggravating cause of the cardiophobia. The day before I left Philadelphia, my secretary asked me very concernedly whether I thought she could pass a medical examination for life insurance, since a physician told her that she had a split heart sound when she was examined for swimming quite a few years ago. Such casual terms as murmur, leak, missing beats, and high and low pressure, if used at all, should at least be explained as to their true significance. What greater service can one render to an individual who is constantly in fear of being in the clutches of a serious cardiac malady than to properly explain the true and most often negligible abnormalities which they present? Who but an understanding family physician can dispel such fears, provided he expresses his opinion after a thorough investigation and is absolutely sure of his statements?

The second group of heart cases which the family physician often meets are those due to infections. It is generally agreed that most preventive work can be done in diseases of the heart in this group. The greatest offender is rheumatic infection, and we will therefore confine most of our remarks to the rheumatic heart. Here the physician has the greatest opportunity to do prophylactic work, and prophylaxis in this group may be divided into three stages:

Reducing the Number of Cardiac Affections.—(*a*) By preventing acute infectious diseases as much as possible by proper hygiene, keeping up body resistance, and eliminating all possible foci of infection.

This would be the first step in prophylaxis; but we are not always so fortunate as to be able to do this, and, as a result, many children will contract an infection and most often come to us during the active stage. Here again the physician can do an important piece of preventive work, if he will look upon the forerunners of heart disease as cases of carditis and treat them as such, no matter how mild the infection may appear.

Dr. Thomas McCrae, of Philadelphia, aptly said that one of the most important steps in the prophylaxis of heart disease is to call tonsillitis *chorea*, rheumatic fever *growing pains*, and rheumatic nodules *heart disease*.

Unfortunately, not all cases of carditis present symptoms, and, therefore, are discovered only when there is definite cardiac damage. It is rather disappointing at times that, in spite of ideal surroundings and most modern management, these cardiac infections remain active for many months and even years. It is gratifying, nevertheless, that many cases of active carditis which are managed in a way similar to those of active tuberculosis conquer their infection in a shorter time and recover with less damage than those which are allowed to go on without any supervision except a general tonic here and there.

We have no pathognomonic signs to guide us. A carefully kept record of a child's temperature, taken every three hours with a so-called minute thermometer kept in the mouth from three to five minutes (the mother may be taught to do this), may reveal an afternoon rise to 100° and sometimes more. This is also true of children who look well, attend school, and are quite active. The elevation of temperature is not always seen, because some of these children run a subnormal temperature. A leucocytosis is often found. If the history is carefully investigated, actual symptoms of the infection, such as "growing pains," mild twitchings, frequent sore throats, pain in the muscles or joints, torticollis, vague abdominal pains, finicky appetite, etc., can be easily detected. These children show a rather rapid, progressive enlargement of the heart; but by this I do not mean such marked enlargement that it may be detected with certainty upon physical examination. Teleoröntgenograms (x-ray plates taken six to seven feet from the patient) made every three months will definitely show it.

What should be done with patients where active rheumatic infection is only suspected? To quote Carey F. Coombs, from his excellent and most thorough treatise, "Rheumatic Heart Disease," "The reasonable attitude seems to me to be that one must treat the suspect as convicted until he is proven innocent."

We must not confuse active rheumatic carditis with subacute bacterial endocarditis or endocarditis lenta. They differ greatly in their symptomatology, clinical course and prognosis. Endocarditis lenta will often occur in a victim of rheumatic infection. Bell and Clawson consider subacute bacterial endocarditis a differet stage of rheumatic carditis, while Libman suggests the possibility of separate infections being present in the same individual.

The family physician often sees patients for the first time with various degrees of cardiac damage—sometimes long after the active infection has subsided, the remains after the fire. The physician can so regulate the patient's life as to prevent further mechanical damage, which is bound to follow if the cardiopath lives beyond his cardiac capacity. As far as medical treatment is concerned, very few advances have been made.

How do these cases usually come to the physician's attention? The greatest number of cardiac lesions are discovered by a careful family physician who does not stop after making a diagnosis of measles or scarlet fever, but who thoroughly examines the child's cardiovascular system. An astonishing contribution is being made by the conscientious school physician in spite of the fact that, in some communities, he is not permitted to strip the children in order to make a proper physical examination. A few cases are discovered during periodic health examinations, the practice of which, unfortunately, is not yet widely employed. Occasionally, cases are found when brought to the doctor, not for an examination, but because the parents think the child does not look well and is in need of a good tonic. It is also important to mention the hypertensive group of cardiovascular cases, since they comprise such a tremendous number of our cardiac patients who are past middle age. It appears, without doubt, that a good many of these cases might be detected long before they are usually discovered, and, by proper management, vascular wear might at least be postponed.

What type of patient should the general practitioner refer for more specialized study and opinion?

1. The neurotic that has been making the rounds and is suffering from cardiophobia. They are rarely satisfied until the condition is thoroughly investigated, and even then it only serves as a more convincing argument upon which the family physician can base his opinion.

2. Cases where the family physician is not certain as to whether there is a cardiac lesion or whether an existing lesion is responsible for given symptoms. It is at times difficult to determine whether the precordial pain is due to a cardiovascular lesion or if it is a reflex phenomenon from some other organ. The same is often true in cases of abdominal disturbance.

3. Every child in whom a definite cardiac lesion is found should have a thorough cardiovascular study annually and the findings carefully compared each time. This class of patients must get the utmost attention in order to prevent as many young cardiac

cripples as possible. One can scarcely realize how gradually but progressively the heart enlarges in some children who appear to be normal, as a response to strain put upon a damaged heart.

4. Preoperative cases where the functional capacity of the cardiovascular system is doubtful.

5. Cases where the integrity of the peripheral vessels is questionable. This particularly applies to vascular disease of the extremities.

It is beyond argument that a thorough history and complete physical examination ranks first and foremost in its importance and significance in the evaluation of a cardiovascular system. The fluoroscopic and x-ray study of a heart by one who is trained to interpret the various cardiac configurations and their significance is of great importance. The electrocardiogram tends to shed some light. The patient's functional response to effort, which can be easily observed by every practicing physician, is of great significance; not only the observation of the pulse rate and its return after effort, but the general response of the patient, *i.e.*, undue fatigue, the degree and duration of dyspnea, palpitation, etc.

The oscillometric readings yield important information concerning peripheral vessels, particularly as to their expansibility. Hence the importance of oscillometry in cases of thrombosis or embolism of the peripheral vessels, especially when amputation is considered.

In what way can a cardiovascular clinic serve the general practitioner?

1. To examine all the patients who can not afford to pay for private consultation. Many individuals can pay the usual family physician's fee, but can not afford to pay for an extensive cardiovascular study. Such individuals, if sent to a properly conducted cardiovascular clinic, will be thoroughly studied for a nominal fee, and the report of the findings and suggestions will be submitted to the family physician. Such patients who need specialized attention and can not afford to get it privately may be referred by their physicians to the clinic for treatment. Physicians who are interested may attend the cardiac clinic in order to see a segregated group of heart cases, and in this way keep abreast with one of the fields of medicine that is making rapid strides. The cardiac clinic, through its social service (and no cardiac clinic can function properly without a well-organized social service department), may help the family physician to secure scholarships in various trades and educational schools for some of his cardiac patients who can not secure it themselves. The social service may also assist in securing suitable occupations for certain cardiac patients. Through the heart clinic, the family physician may be advised where and how he can secure proper convalescent care for his cardiac cases. Many communities have been made conscious of the great necessity for convalescent homes through the efforts of those in charge of heart clinics.

An important relation exists between the family physician and the school authorities, though often a slight misunderstanding seems to exist. The physical education instructor always feels that the doctor will excuse a child from physical exercise upon the least provocation. We must admit that, at times, we are guilty of taking this phase of school work rather lightly, and, without too great consideration, will ask the school authorities to excuse a child from exercise, sometimes with a mother's request as the only indication. On the other hand, some of our physical education teachers are not sufficiently acquainted with the family physician's problems. If the school teacher would realize, as some do, that it is just as important for him to coöperate with the physician in constantly educating and guarding certain cardiac children from overdoing as it is for them to train the normal child in health-building physical exercise, the end result would be much more satisfactory. The classification adopted by the American Heart Association is extremely helpful in creating a more thorough understanding between the school and the family physician, provided the use of it becomes universal. Copies of this classification should be sent out to all the schools. It is as follows:

Class I: Patients with organic heart disease who are able to carry on ordinary activity without discomfort. If the etiological process is fully arrested and the child presents only a slight mitral insufficiency upon physical examination, with the heart but slightly enlarged in its transverse diameter, he may be allowed to do the normal amount of physical work in proportion to his age and physical development, only abstaining from strenuous and competitive athletics. These children should be followed up, nevertheless, as I have already mentioned, at least once a year, in order to be sure that the heart does not undergo undue hypertrophy or that our so-called mitral insufficiency does not develop into a mitral stenosis, due to scar contraction.

With Dr. Cabot's figures in mind, one becomes rather hesitant about making a diagnosis of mitral insufficiency; but isn't it true that we see many children with all the classical evidence of mitral insufficiency, in whom the valve undergoes changes

over a period of years and becomes further deformed, producing a stenosis? There is no doubt that a child who presents evidence of aortic valvular disease, stenosis or regurgitation, pericardial adhesions or mitral stenosis, should be more carefully supervised. They should only be permitted to indulge in walking and games which require little effort, or some form of occupational therapy. It is the duty of the teacher in physical education to enforce the family physician's advice, although it may appear that the child responds well to all forms of exercise and games. They only judge the immediate effect, while the family physician tries to safeguard the future of the child. This is the hardest class of cardiacs to manage, for the very reason that there are no symptoms and the patient's functional capacity for effort is good.

Class II: Patients with organic heart disease, who are unable to carry on ordinary physical activity without discomfort. As a class they are easier to manage because they understand the physician's warning much better since it has been borne out by their past experience. It is best to arrange for this group of children to have an elevator permit, or their classes should be conducted on the ground floor. It may be advisable for some to attend only one school session. An understanding teacher will permit these children to do their reciting first in order to prevent as much mental anxiety as possible. Occupational therapy, walking, breathing exercises, and suitable games are best for this class. Careful management of these cases during school age will often result in surprising improvement.

Class III: Patients who show evidence of heart failure, even while at rest. Such cases are, of course, managed in the orthodox fashion, and there is no one more capable of treating these cases than the family physician, who knows the individual's idiosyncracies and understands both the economic and social problems. This surpasses in importance, by far, the knowledge of the latest methods of diagnosis and drugs.

Class E: Possible heart diseases. Patients who have recovered from one of the infectious diseases and present some abnormality which is advisable to follow up. Such cases certainly should not be subjected to any excessive strain for at least three to six months, for fear of lighting up some latent infection.

In conclusion, may I state that, in order to properly evaluate a cardiovascular system, all available methods of examination should be resorted to? In a practical book published under the auspices of the American Heart Association, the following matters are fully discussed and should be taken into consideration:

(*a*) The etiology of the cardiac condition, whether rheumatic, syphilitic, bacterial, thyrotoxic, etc., and to determine whether the etiological factor is active or arrested.

(*b*) The anatomical diagnosis, whether there is a normal rhythm or an arrhythmia, and the particular type of arrythmia; the existence and degree of cardiac failure, effort, or the presence of an anginal syndrome, are important factors in evaluating a cardiovascular system.

While a complete cardiovascular study at times only offers an accumulation of trifling advantages to the physician, in the majority of instances it leads to a more accurate and, therefore, a more intelligent prognosis and management.

CASE REPORTS

ANTEPARTUM ECLAMPSIA *

By C. L. WOODBRIDGE, M.D.
Montgomery, W. Va.

Mrs. X, white, 33 years of age, admitted directly to the hospital at 2 P.M., having had two severe convulsions—one at 9 A.M. and one at noon. Past history grossly negative, except that at the age of twelve she had intestinal obstruction for several days, accompanied by convulsions; had pneumonia when a child. Married six years; first pregnancy. For ten years she had suffered sporadically from frontal sinusitis. Tonsillectomy and sinus operation were performed several years ago. Family history was negative, except that patient's mother had renal disease. Before admission patient had been enjoying good health. Last menstrual period six and a half months before admission. No matutinal nausea nor vomiting. Excellent prenatal care. Frequent negative urinalyses; blood-pressure had not exceeded 120. Five days before admission, blood-pressure was 120, urinalysis negative; later that day, there was pain in the right frontal sinus, continuing sporadically. After the first convulsion at 9 A.M. she received morphine, and after the second at noon, luminal, bromides, and morphine.

Physical examination reveals a young white woman of pasty color, lying quietly in bed. She can

* Read before the Fayette County Medical Society, Oak Hill, West Virginia, February 12, 1930.

From the Department of Obstetrics, The Montgomery Clinic and Coal Valley Hospital, Montgomery, West Virginia.

be aroused, but quickly returns to sleep. There is edema of the face. Cardiac enlargement fifteen centimeters to left of midline. Blood-pressure, by mercury sphygmomanometer, 188/148. No fœtal heart sounds audible. No movements palpable. Pelvic outlet marital but not parous. Cervix moderately soft; not thinned out. Cervical canal six millimeters in diameter. Urinalysis: Very heavy cloud of albumin, many hyaline and granular cases; non-protein nitrogen 32.4 mgm., and urea nitrogen 17.7 mgm.; CO_2 combining power of blood plasma 39 vol. %. Wassermann and Meinicke negative. Impression: Eclampsia antepartum, complicated by acidosis and acute nephritis.

Patient seen in consultation by my associate, Dr. Borman, who made a diagnosis of myocardosis and suggested the use of concentrated solution of dextrose intravenously. Dr. Davies made a further diagnosis of maxillary sinusitis. Dr. Laird and I agreed with the patient's family physician that the uterus should be emptied. After catheterization and a saline enema, the cervix was lightly packed with gauze, following which the patient received several hypodermics of pitocin and two intravenous injections of 50% dextrose solution. Magnesium sulphate solution was introduced into the stomach through a nasal tube.

Four hours after admission the blood-pressure was 150/118. Later the cervical packing was removed. Three hours thereafter the patient received a hypodermic injection of morphine and the cervix was packed tightly with three and one-half yards of gauze. Following this, pitocin, magnesium sulphate, and oleum ricini were administered. There was slight abdominal pain and a small amount of vaginal bleeding. During the next day the patient received five injections, 20 c.c. each, of 50% dextrose solution, and pitocin was given. Systolic blood-pressure varied from 150 to 170. There were two large, liquid stools; also vomiting, and abdominal pains at five- to ten-minute intervals.

Eight hours after removal of the second packing, the patient was taken to the operating room and morphine was administered. Cervix admitted one finger; digital dilatation was done. Without inhalation anesthesia and without excessive pain, craniotomy was done and the fœtus extracted—male, forty centimeters in length. No perineal laceration. Non-protein nitrogen 33.3 mgm., and urea nitrogen 14.7 mgm. Urinalysis showed a heavy cloud of albumin and many hyaline and granular casts. Two days after admission less albumin in the urine and no casts; non-protein nitrogen 38 mgm., and urea nitrogen 18.8 mgm; CO_2 48.5 vol. %.

Three days after admission, systolic pressure had risen from 150 to 168; diuresis beginning. No convulsions since admission to hospital. Urinary output exceeds fluid intake. Fourth day, non-protein nitrogen 25 mgm. and urea nitrogen 12 mgm; the urine showed a cloud of albumin and some pus cells.

Seventh day: Salt-free diet; continued improvement. Eighth day: Pain over right sinus, which was drained after shrinking of turbinates. Ninth day: Blood-pressure increased from 120 to 130. Eleventh day: Slight cloud of albumin and occasional hyaline cast in urine; non-protein nitrogen 28.5 mgm., urea nitrogen 13.7 mgm.; CO_2 57.9 vol. %. P. S. P. elimination: First half-hour, 50%; second half-hour, 15%; third half-hour, 10%; fourth half-hour, 5%; total, 80%. Patient was allowed to sit up in a chair.

Thirteenth day: It was necessary to impart to the patient news of the death of a relative, following which the systolic pressure reached 190. It descended to 138 in forty-eight hours.

Nineteenth and twentieth days: Mosenthal and Addis tests showed inability to concentrate urine and excrete water. Urinalysis showed trace of albumin. Blood-pressure, 120 to 130.

On the twenty-third day the patient was discharged from the hospital.

SURGICAL TREATMENT OF PULMONARY TUBERCULOSIS *

By RUSSELL B. BAILEY, M.D.
Wheeling, W. Va.

Andrew B., age 21 years, by occupation a restaurant worker, became ill in July, 1925. For the previous six months he had noticed a gradual loss of weight, persistent tired feeling, and had coughed a great deal. Later he had drenching night-sweats and his cough was productive of blood-streaked sputum at times. A diagnosis of active pulmonary tuberculosis was made and he was admitted to Hopemont Sanatorium in October, 1925, ten months after the onset of his symptoms. In October, 1926, during a period of four days, the patient lost approximately 80 ounces of blood because of pulmonary hemorrhage. Hemoptysis was finally controlled by pneumothorax. The pneumathorax was

* From [illegible] Wheeling West Virginia Reprinted from *The West Virginia Medical Journal* Vol. XXVI, No 5, May, 1930

continued for about one year. During this time massive pleural effusion was noted. Frequent aspiration, followed by refill with gas, was done. Following the attack of hemoptysis the patient's general condition improved somewhat. He gained in weight from 167 to 182 pounds. In spite of prolonged bed rest and adequate symptomatic treatment, he suffered frequent febrile relapses.

Examination on February 4, 1928, revealed the following significant findings: Diminished inspiratory excursion of the entire left chest. Dullness over the apex anteriorly and posteriorly. Tympani was present below the second rib anteriorly. Amphoric breath sounds and numerous moist râles were noted

Fig. 1.—Photograph taken February 4, 1928.

at the apex. The right lung showed no evidence of involvement except for an occasional moist râle in the left intercapsular area. Röntgen-ray examination showed complete collapse of the left lower lobe, extensive infiltration and cavitation in the left upper lobe, and a small amount of pleural effusion at the left base. There was evidence of very slight parenchymatous involvement in the right upper lobe. Temperature had been normal for a period of several weeks, except for an occasional afternoon rise to 99°. The patient was raising approximately four

Fig. 2.—Photograph one year later, following left-sided thoracoplasty. Note the slight degree of thoracic deformity after removal of 103 cm. of ribs.

ounces of sputum per day. The sputum was positive for tubercle bacilli.

This examination revealed that the left upper lobe had not been collapsed by the pneumothorax. This was probably due to numerous adhesions about the apex. It was deemed highly desirable that this portion of the lung be collapsed in order that the cavities in the parenchyma could be obliterated and to promote healing by putting the diseased lung tissue at rest. Thoracoplasty was decided upon favorably. The absence of parenchymatous involvement on the right side favored such a procedure.

On February 4, 1928, three years after the onset of symptoms, left phrenic exuresis was done as a

preliminary step for thoracoplasty. Approximately six inches of the phrenic nerve was removed. Following this operation, fluoroscopic examination revealed elevation and paralysis of the diaphragm on the left side.

On March 15, 1928, the first stage of an extrapleural thoracoplasty was done. Under combined local and gas anesthesia a total length of 70 cm. of ribs one to eight inclusive was removed. Postoperative convalescence was uneventful. Twelve days later, the second stage was done, 33 cm. of ribs nine to eleven inclusive being removed. After an uneventful convalescence the patient was returned to Hopemont Sanatorium.

For a period of two to three months thereafter, the patient's general condition did not improve a great deal, although he was entirely free from fever and his occasional cough produced but very little sputum. Following this, however, his improvement was rapid and uninterrupted. Six months after thoracoplasty, progressive exercise was permitted and has been continued without interruption. At present he is out of bed all day and carrying on the duties of a barber. He has no elevation of temperature, is free from sputum, and suffers no inconvenience incident either to his operation or his disease. Röntgen-ray examiantion at this time shows a complete collapse of the entire left lung. The right lung shows no evidence of disease. It is not presumptious to assume that this patient is completely cured of his disease. At least he has been permitted to return to a gainful occupation and enjoys what he speaks of as "the best of health." The accompanying photographs, which were taken one year apart, tell much of the story of the marked mental and physical improvement which has occurred.

TUBERCULOSIS ABSTRACTS

Basic (Vitamin) Feeding in Tuberculosis

Proposals for the treatment of tuberculosis by some form of nutritional therapy reappear periodically. Recently, the regimen devised by Gerson, based on the studies from Sauerbruch's clinic in Munich, has attracted the attention of physicians and laymen, largely through incomplete press reports of a "salt-free diet." Edgar Mayer, of Saranac Lake, was privileged to visit Sauerbruch and Gerson's clinic to observe their dietary methods. Upon returning to this country, Dr. Mayer and his associates, with the assistance of Frau Jungklaus, who received her dietetic training in the German clinic, applied the method to a group of thirty patients. The results are reported in the *Journal of the American Medical Association*, December 14, 1929, from which the following abstracts are derived:

The diet in advanced tuberculosis should be of a caloric value sufficient to cover the metabolism (increased by the toxemia especially) as well as the atrophy induced by the disease. But the pulmonary mechanism should not be burdened by an excessive caloric intake. Fifty calories per kilogram is the optimum. Theoretically, the protein intake should be increased, but this accelerates metabolism and hence prevents pulmonary rest. On a 3,500-calory diet, a daily intake of 100 grams of protein will maintain a tuberculous patient in positive nitrogenous equilibrium.

Gerson Diet Is Base-Forming.—Fulfilling the caloric requirement is not enough, for the wasting in tuberculosis involves a corresponding demineralization. The Gerson diet makes good this deficiency by including base-forming solids. The German physicians seem to be confused about the acid-forming and base-forming values of the dietary; but Mayer states that "an analysis of the diet reveals definitely its base-forming nature." Sodium chloride is excluded because it favors tissue hydration, which is already excessive in tuberculous processes. The most significant feature of the dietary is that it is rich in vitamins A to G, and this constitutes a specific advance in this particular form of dietary treatment of tuberculosis.

Rats fed on acid-forming (left) and base-forming (right) diets.

Mayer observed in the German clinics "definite healing in advanced cases of lupus vulgaris of the face and mucous membranes that had previously been resistant to all other accepted forms of treatment. These results seemed far more striking to us

than those claimed for the other forms of tuberculosis, which included tuberculosis of the bones and joints, lymph nodes, lungs, peritoneum and genito-urinary tract, both with and without sinuses." Lupus is a prevalent complication in European countries, while in the United States it is relatively rare.

Diet Tested in United States.—Upon returning to this country, Mayer selected thirty patients who had failed to respond to accepted therapeutic measures for two or three years. Of these, ten were excluded before the end of the six months' period, for various reasons. The twenty patients who completed the experiment showed a substantial gain in weight which it had been impossible to attain by previous procedures. Many of the alimentary disturbances which had persisted on other diets cleared rapidly with this regimen. The diet was well tolerated except in two instances. It was effective in diminishing fatigue and induced a sense of well-being. The slight elevation of temperature disappeared in a few cases.

Physical and röntgenological examinations of the chest showed, in about one-third of the cases, definite clearing, with an occasional contraction of a cavity. The other patients did not show any marked changes. The quantity of sputum diminished considerably in about half the cases, but in none did it become negative for tubercle bacilli. A few of the patients showed marked diminution of cough. Hemorrhages occurred in some during the experiment as well as before. Chest pains disappeared in a few who constantly complained of this symptom before. Two cases of intestinal tuberculosis which had resisted other therapeutic procedures cleared up clinically, and the röntgenological filling defects of the colon disappeared; one remained unchanged.

Experiments on Rats.—The author cites also chemical and nutritional studies in two groups of albino rats to determine the effect of acid- and base-forming diets on the blood, bones, and metabolism. Compared with the rats on the acid-forming diet, those on base-forming diets gained markedly in weight, their bones were larger, firmer, and non-rachitic, their muscular tone was better; they were more vigorous, their appetite was keener, they did not succumb to infection as easily; in short, the general metabolism and wellbeing was superior.

Dr. Mayer realizes that his preliminary study of human patients permits of no dogmatic statement, because the group was distinct from those of the German clinics, where more favorable results were observed, and because of the difficulty of clinic control; the only means being the selection of patients who failed to respond to accepted therapeutic measures for two or three years. The favorable results in about one-third of the patients studied for a period of six months of careful supervision may perhaps be attributed to the effect of the dietary. But critical clinicians may justly maintain that contributory factors other than diet were operative in the end-result. The phychic element, the enforced rest, the occasional tendency of the disease to subside spontaneously, the wholesome food, its scrupulous preparation and careful cooking, and the individual service are factors that must be considered in a final analysis.

Importance of Vitamins.—Mayer believes that the inorganic constituents, whether acid-forming or base-forming, are not as important as the vitamin content of the dietary. Such foods as milk, vegetables, and fruits are rich in vitamins and are base-forming. These two factors regulate cellular metabolism, and the utilization of minerals depends on the simultaneous presence of vitamins in the alimentary tract.

Extravagant and unwarranted claims have been made for the Gerson diet, but it is certainly not a cure for tuberculosis. In isolated cases it may be of value, but only as an aid to the accepted routine treatment, the mainstay of which is still rest.

Truth About Medicines

Diphtheria Toxoid-National.—A diphtheria toxoid prepared from seven-day cultures of the diphtheria bacillus that yield a toxin having an L^+ dose of not less than 0.25 c.c. The toxin is treated with formaldehyde. The finished product is tested for antigenic potency. The product is marketed in packages of three vials (one immunization treatment); in packages of one vial (fifteen immunization treatments); packages of forty-five vials (fifteen immunization treatments). The National Drug Company, Philadelphia.

Scarlet Fever Streptococcus Antitoxin-Cutter.—A scarlet fever streptococcus antitoxin prepared by the method of Drs. Dick by license of the Scarlet Fever Committee, Inc. It is marketed in packages of one syringe containing 2,000 units, and in packages of one syringe containing 6,000 units. Cutter Laboratory, Berkeley, Calif.

Ampoules Sodium Cacodylate-Mulford, ¾ grain, 1 c.c.—Each ampoule contains sodium cacodylate 0.05 gm. (¾ grain) in 1 c.c. of sterile solution, with 1 per cent of benzyl alcohol. H. K. Mulford Company, Philadelphia.

THE WEST VIRGINIA MEDICAL JOURNAL

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J. HOWARD ANDERSON (1-year term) — Hemphill
H. G. STEELE (2-year term) — Bluefield

Sixth District:
R. H. DUNN (1-year term) — South Charleston
H. A. WALKUP (2-year term) — Mount Hope

¶ All original articles for THE JOURNAL must be made to it exclusively. Communications and items of general interest to the profession are invited from all parts of the state. Notices of deaths, removals from the state, changes of location, etc., are requested.

¶ Our readers are requested to send marked copies of local newspapers containing matters of interest to members of the medical profession. Name of sender should be given.

CONTRIBUTIONS TYPEWRITTEN

¶ Contract with present printer specifies that all articles, communications, etc., MUST BE TYPED.

NOTE—Typewriting should always be DOUBLE-SPACED.

ADVERTISEMENTS

¶ Advertising forms will go to press not later than the tenth of each month. All advertisements must conform to the standard established by the Council of Pharmacy and Chemistry of the American Medical Association.

WOMAN'S AUXILIARY

Mrs. J. P. Lilly, Morgantown	President
Mrs. W. C. Swann, Huntington	President-elect
Mrs. H. G. Camper, Welch	First Vice-President
Mrs. S. S. Hall, Buckhannon	Second Vice-President
Mrs. A. H. Hoge, Bluefield	Third Vice-President
Mrs. Brinley John, Morgantown	Recording Secretary
Mrs. H. C. Powell, Morgantown	Corresponding Secretary
Mrs. E. B. Henson, Charleston	Treasurer
Mrs. R. H. Edmondson, Morgantown	State Historian
Mrs. M. I. Mendeloff, Charleston	Editor to the Journal

Councillors

Mrs. C. G. Morgan, Moundsville, first district; Mrs. Ralph Maxwell, Morgantown, second district; Mrs. H. D. Price, Parkersburg, third district; Mrs. J. R. Bloss, Huntington, fourth district; Mrs. A. G. Rutherford, Welch, fifth district; Mrs. E. S. Dupuy, Beckley, sixth district.

STANDING COMMITTEES

Medical Defense Committee

C. G. Morgan, Moundsville, chairman; H. A. Walkup, Mt. Hope; H. G. Steele, Bluefield.

Committee on Scientific Work

Howard T. Phillips, Wheeling, chairman; R. C. Hood, Clarksburg; Robert King Buford, Charleston.

Public Policy and Legislative Committee

R. A. Ireland, Charleston, chairman; R. H. Walker, Charleston; James McClung, Richwood; C. R. Ogden, Clarksburg; D. A. MacGregor, Wheeling.

Committee on Medical Education

John N. Simpson, Morgantown, chairman; W. T. Henshaw, Charleston; W. S. Fulton, Wheeling.

Committee on Professional Relations

John R. Shultz, Charleston, chairman (4-year term); A. G. Rutherford, Welch (5-year term); W. R. Goff, Parkersburg (1-year term); Hugh G. Nicholson, Charleston (2-year term); E. P. Smith, Fairmont (3-year term).

Workmen's Compensation Committee

W. A. MacMillan, Charleston, chairman; C. A. Ray, Charleston; John E. Cannaday, Charleston.

Committee on Public Health

David Littlejohn, Charleston, chairman; John Thames, Charleston; Will McLain, Wheeling.

Surgical Section

A. G. Rutherford, Welch, chairman; G. G. Irwin, Charleston, secretary.

Eye, Ear, Nose and Throat Section

F. T. Scanlon, Morgantown, chairman; S. S. Hall, Buckhannon, secretary.

Hospital Association Officers

J. S. Turk, Wheeling, president; B. I. Golden, Elkins, president-elect; W. E. Vest, Huntington, first vice-president; A. G. Rutherford, Welch, second vice-president; Mr. Joe W. Savage, Charleston, secretary-treasurer.

PRESIDENT'S PAGE

SPRING is upon us and the White Sulphur meeting only a few weeks off. The program is well rounded, and the golf course beckons. All reports from the local societies presage a large attendance. Come, everybody! Let's make this the best-attended state meeting ever!

The members of the House of Delegates are especially urged to be present for the meeting Monday evening, May 19. A full attendance at each meeting is a necessity. In all probability there will be more far-reaching legislation considered at this convention than at any preceding, and careful deliberation should precede any action.

Several amendments to the constitution are pending, one of which, if adopted, will change materially the complexion of the Council. The question of reëstablishing the Medical Defense Fund will certainly be considered at length. This is a very vital matter to many of the members and should be weighed most carefully. Two of the larger societies have voted unqualified approval of the action taken last year at Martinsburg when the fund was abolished. Several others have disapproved that action. All delegates should be on hand at all meetings. Let's think well before we vote.

Once again—*All aboard for White Sulphur!*

Walter E. Vest

EDITORIAL

Come to White Sulphur

This issue of the JOURNAL is filled with information and announcements concerning the coming state meeting at White Sulphur Springs on May 20-23, 1930. The date, as far as the committee has been able to determine, does not conflict with any other meeting dates in West Virginia or in the country at large. It is known as one of the most beautiful periods of the year. It is usually the time when all roads in West Virginia are at their best.

Let's make all roads lead to White Sulphur on May 20. Get in early and rest up before the opening session starts. Bring your bathing suits, your tennis racquets, and your golf clubs. Still more important, bring your wives. But, no matter what you bring or how you come, the essential thing is to be at White Sulphur when the session opens on the morning of May 20. None of us can afford to miss the biggest and best meeting the Association has ever held.

Drugs by Mail

At a recent meeting of the Central West Virginia Medical Society at Richwood, the question was brought up of sending narcotics and poisonous drugs by mail. A letter from the office of the postmaster general of the United States was produced at that time, setting forth that many doctors in West Virginia and elsewhere knowingly violated the postal laws by sending certain drugs to their patients through the mails.

Congressman John M. Wolverton, of West Virginia, has offered to introduce a bill in Congress to eliminate the postal regulation forbidding the mailing of certain drugs from doctor to patient, provided there is sufficient sentiment in his district in favor of such a bill. The Central West Virginia society is contemplating the passage of a resolution at its next meeting in favor of this legislation, and a committee has been appointed for the purpose of drafting the resolution. It was pointed out at the Richwood meeting that many country doctors, if permitted to send drugs through the United States mails, would be relieved in many cases from making trips of from ten to twenty-five miles into the country to administer to a patient whose condition has already been diagnosed and is known by the doctor.

If this proposed legislation will be of assistance to the country doctor, and if it will help to conserve his time and energy, it is well worthy of earnest consideration and thought.

ANNOUNCEMENTS

Fifteenth Clinical Session

The American College of Physicians will hold its fifteenth annual clinical session at Baltimore, Maryland, from March 23 to March 27, inclusive, 1931. The Lord Baltimore Hotel will be headquarters.

Dr. Sydney R. Miller, Baltimore, as president, will have charge of the selection of the general scientific program. Dr. Maurice C. Pincoffs, of Baltimore, has been appointed by the board of regents as the general chairman of the session, and will make all local arrangements, including the making up of the program of clinics. Business details will be handled by the executive secretary, Mr. E. R. Loveland, from the College headquarters, 133-135 South Thirty-sixth Street, Philadelphia.

The attention of secretaries of various societies is called to the above dates in the hope that their societies will select non-conflicting dates for their 1931 meetings.

Ear, Nose and Throat Course

Prof. Georges Portmann will give a five-week post-graduate course in ear, nose and throat surgery at the University of Bordeaux, France, commencing July 21, 1930. This course is open to American physicians. For information, apply to Dr. L. Felderman, Mitten Building, N. W. Cor. Broad and Locust Sts., Philadelphia, Pa.

Announce Goiter Award

Beginning this year, the American Association for the Study of Goiter will award a cash prize of $300 annually for the best original thesis dealing with some phase of the goiter problem. Theses should be submitted by June 1 to Dr. Walter M. Simpson, chairman of the essay committee, Miami Valley Hospital, Dayton, Ohio. The award will be given immediately following the coming meeting of the association, which is to be held in Seattle, Washington, July 10–12, 1930.

Dr. Borman's Successor Named

Recently, Dr. M. C. Borman, of the Montgomery Clinic, Montgomery, West Virginia, accepted an appointment with a Milwaukee group, and his successor, Dr. W. V. Wilkerson, has not yet arrived. In the interim, an associate, Dr. C. L. Woodbridge, is in charge of the medical work at the clinic and hospital.

Dr. Woodbridge is a graduate of Princeton and of Johns Hopkins Medical School. After further

training in Philadelphia, he was for some years a medical missionary in several hospitals in China. He joined the clinic in 1927.

Dr. Wilkerson, who succeeds Dr. Borman, is a native West Virginian, a graduate of Ohio University, a Master of Science from Cornell, and a graduate of Johns Hopkins Medical School, with later training at the Walter Reed Hospital. He taught at Cornell and later at the Medical College of Virginia. He is exceptionally well qualified for this appointment.

Kidney Symposium

The University of Minnesota has recently issued invitations to a symposium on "The Kidney in Health and Disease," which will be held at the University medical school in Minneapolis on July 7–18, 1930. The university will attempt to provide dormitory accommodations at a reasonable price during the symposium if registration is made before June 1. There will be no registration fee. All correspondence in regard to the symposium should be addressed to Dr. Hilding Berglund, University Hospital, Minneapolis, Minnesota.

Descartes Reprints Available

The West Virginia State Medical Association still has available a number of reprints of the philosophical paper, "Descartes Was Right," which was presented by Dr. Harry M. Hall, of Wheeling, at the conference of secretaries and editors of the American Medical Association last November. This paper was first published in the A. M. A. *Bulletin* and later in a number of state medical journals, including the WEST VIRGINIA MEDICAL JOURNAL. These reprints, while they last, will be sent without cost to members desiring them.

OBITUARY

Dr. John A. Tyree

Dr. John A. Tyree, formerly of Page, West Virginia, and well known throughout the southern part of this state, died at his home at Danville, Virginia, on March 20, after an illness of two and one-half months. He was born in Danville in 1886 and was graduated from the Medical College of Virginia in 1908. He was a member of the Medical Society of Virginia and a past president of the Academy of Medicine of Danville, also a former member of the West Virginia State Medical Association.

After his graduation Dr. Tyree located at Blackstone, Virginia, for two years, later moving to Page, in this state, where he remained until 1921. He then took a special course in eye, ear, nose and throat work at the Bellevue Hospital in New York and began the practice of this specialty at Danville. Dr. Tyree was an active member of the Rotary Club and also belonged to the Masonic order. He is survived by his wife and three sons and three daughters.

Dr. Richard T. Davis

Dr. Richard T. Davis, former health commissioner of West Virginia under Governor John J. Cornwell, died recently at Warsaw, Virginia, at the age of 57 years. He resided in Charleston until three years ago and was a part owner of the Charleston General Hospital. He is survived by his widow and by five brothers and three sisters.

Dr. Clarence J. Broeman

Dr. Clarence J. Broeman, of Cincinnati, well-known dermatologist, died on April 3, 1930, following a week's illness. Death was caused by a complication of heart and kidney diseases. Dr. Broeman was a member of the medical faculty of the University of Cincinnati, and was forty-six years of age at the time of his death. He was fairly well known in West Virginia, and had contributed a number of scientific papers for publication in the WEST VIRGINIA MEDICAL JOURNAL.

New and Non-Official Remedies

The following articles have been accepted by the Council on Pharmacy and Chemistry:

Abbott Laboratories, Inc.—Butesin Picrate Eye Ointment.

Lakeside Laboratories, Inc.—Ampoules Dextrose (d-Glucose) 10 gm., 20 c.c.; Ampoule No. 51 Sodium Cacodylate 0.243 gm. (3¾ grains), 5 c.c.

H. K. Mulford Co.—Pneumococcus Antibody Solution, Types I, II, and III Combined-Mulford, four 50-c.c. double-ended vials.

The following articles have been exempted and included with the List of Exempted Medical Articles (New and Non-Official Remedies, 1929, p. 481):

Davies, Rose & Co., Ltd.—Pil. Digitalis (Davies, Rose).

Kings County Packing Co.—Sac-A-Rin Brand California Bartlett Pears; Sac-A-Rin Brand California Tidbits Hawaiian Pineapple; Sac-A-Rin Brand California Royal Anne Cherries.

Lakeside Laboratories, Inc.—Ampoule No. 64 Calcium Chloride 10%.

CONVENTION NEWS

Official Call

To the Officers, Delegates, and Members of the West Virginia State Medical Association:

The sixty-third annual meeting of the West Virginia State Medical Association will be held at White Sulphur Springs, West Virginia, with headquarters at the Greenbrier Hotel, from Monday, May 19, to Thursday, May 22, 1930.

The Council will convene at 3:30 o'clock on the afternoon of May 19.

The House of Delegates will convene at 8 o'clock on the evening of May 19.

The general scientific assembly will meet for the first time at 9:30 o'clock on the morning of May 20.

The surgical section will convene at 1:30 o'clock on the afternoon of May 21.

The eye, ear, nose and throat section will convene at 1:30 o'clock on the afternoon of May 21.

The section on internal medicine will convene at 1:30 o'clock on the afternoon of May 21.

The annual address of the president will be delivered on the opening morning of the convention.

The oration on surgery will be delivered at the opening of the general session on the afternoon of May 20.

The oration on medicine will be delivered at the opening of the general session on the morning of May 22.

The registration department will be open at 10 o'clock on the morning of May 19, and will remain open until 8 o'clock the same evening. Thereafter, it will remain open from 8:30 o'clock A.M. until 8:30 o'clock P.M. until the close of the convention.

Respectfully,

JOE W. SAVAGE,
Executive Secretary.

Order of Business

Council.—For the Council sessions, the order of business will be as follows:

Call to order by Council Chairman.
Report of Committee on Scientific Work.
Report of Committee on Publication.
Report of Committee on Public Policy and Legislation.
Report of Committee on Public Relations.
Report of Committee on Permanent Home.
Report of Secretary.
Report of Treasurer.
Report of Auditing Committee.
New Business.

House of Delegates.—For sessions of the House of Delegates, the order of business will be as follows:

Call to order by the President.
Receiving credentials.
Report of Committee on Scientific Work.
Report of Committee on Publication.
Report of Committee on Public Policy and Legislation.
Report of Committee on Public Relations.
Report of Committee on Permanent Home.
Reports of Special Committees.
Report of Secretary.
Report of Treasurer.
New Business.

Tentative Program

TUESDAY MORNING, MAY 20
General Session, 9:30 o'Clock

CALL TO ORDER
Dr. Walter E. Vest, Huntington, President.

INVOCATION
Dr. Ben Roller, White Sulphur Springs.

ADDRESS OF WELCOME
Dr. H. L. Goodman, Ronceverte.

RESPONSE
Dr. B. S. Rankin, Kingwood.

PRESIDENT'S ANNUAL ADDRESS
Dr. Walter E. Vest.

JOINT SCIENTIFIC PAPER
The Surgical Treatment of Tyrogenic Auricular Fibrillation.
Dr. E. R. Arn, Dayton, Ohio.
A Correlation of the Clinical and Pathological Concepts of Hyperthyroidism.
Dr. W. M. Simpson, Dayton, Ohio.
Discussion:
Dr. W. R. Goff, Parkersburg.
Dr. R. B. Bailey, Wheeling.

TUESDAY AFTERNOON, MAY 20
General Session Continued—2 o'Clock

ORATION ON SURGERY
The Diagnosis and Treatment of Bronchiectasis
Dr. Carl A. Hedblom, Chicago, Ill.

SCIENTIFIC PAPERS
Fractures of Long Bones and Their Relationship to Adjacent Joints.
Dr. C. H. Clovis, Wheeling.

Discussion:
Dr. R. H. Boice, Parkersburg.
Dr. J. O. Rankin, Wheeling.

SCIENTIFIC PAPERS

Adaptation of the Anesthetic to the Type of Disease or the Type of Operation.
Dr. C. H. McCuskey, Rochester, Minn.
Discussion:
Dr. L. D. Norris, Fairmont.
Dr. Eldon B. Tucker, Morgantown.

TUESDAY EVENING, MAY 20
8:30 o'Clock

LECTURE

Relationship of the Specialist and the General Practitioner
Dr. M. Y. Dabney, Birmingham, Ala.

WEDNESDAY MORNING, MAY 21
9 o'Clock

SCIENTIFIC PAPERS

Ophthalmology and General Practice
Dr. T. W. Moore, Huntington.
Prevention of Puerperal Infection
Dr. Thomas W. Nale, Edwight.
Discussion:
Dr. M. B. Williams, Wheeling.
Dr. D. M. Post, Morgantown.
Agranulocytosis
Dr. F. C. Hodges, Huntington.
Discussion:
Dr. A. R. Mackenzie, Huntington.
Dr. Albert H. Hoge, Bluefield.

WEDNESDAY AFTERNOON, MAY 21
Section on Internal Medicine—2 o'Clock

SCIENTIFIC PAPERS

Surgery in Diabetes Mellitus
Dr. James H. Smith, Richmond, Va.
Discussion:
Dr. S. L. Cherry, Clarksburg.
Dr. Luther C. Davis, Fairmont.
Some Factors Influencing the Stability of the Nervous System in Infancy and Early Childhood
Dr. Andrew E. Amick, Bluefield.
Discussion:
Dr. Russell Bond, Wheeling.
Dr. W. Byrd Hunter, Huntington.
Some Medical Aspects of Gastrointestinal Disorders
Dr. R. J. Condry, Elkins.
Discussion:
Dr. Claude Grimm, St. Marys.
Dr. James H. Baber, Huntington.

WEDNESDAY AFTERNOON, MAY 21
Surgical Section—2 o'Clock

SCIENTIFIC PAPERS

A Careful Clinical, Radiological, and Laboratory Study of All Cases Presenting Urological Symptoms (Lantern Slides)
Dr. O. D. Barker and Dr. R. H. Boice, Parkersburg.
Discussion:
Dr. E. D. Smith, Fairmont.
Dr. B. S. Brake, Clarksburg.
Acute Perforative Diverticulitis of the Sigmoid
Dr. R. W. Whitman, Roanoke, Va.
Discussion:
Dr. W. H. St. Clair, Bluefield.
Dr. W. L. Van Sant, Hinton.
Some Aspects of Gastric Surgery
Dr. R. J. Wilkinson, Huntington.
Discussion:
Dr. R. U. Drinkard, Wheeling.
Dr. Edward M. Phillips, Wheeling.
A Plea for Reduction of Mortality in Appendicitis (Moving Pictures)
Dr. C. Fred Fisher, Clarksburg.
Discussion:
Dr. A. P. Butt, Elkins.
Dr. T. K. Oates, Martinsburg.

WEDNESDAY AFTERNOON, MAY 21
Eye, Ear, Nose and Throat Section—2 o'Clock
(*Note*—This section will also convene Wednesday morning, immediately after the paper by Dr. T. W. Moore, of Huntington.)

SCIENTIFIC PAPERS

Lateral Sinus Disease
Dr. E. C. Hartman, Parkersburg.
Discussion:
Dr. J. E. Blaydes, Bluefield.
Relation of Eye Disorders to Sinus Diseases
Dr. Thomas O'Rourk, Baltimore, Md.
Discussion:
Dr. F. O. Marple, Huntington.
A New Operation for Chronic Purulent Mastoiditis
Dr. J. Morrisset Smith, New York, N. Y.
Discussion:
Dr. H. R. Johnson, Fairmont.
Endoscopy
Dr. Gabriel Tucker, Philadelphia, Pa.

Discussion:
Dr. A. K. Hoge, Wheeling.
Dr. S. S. Hall, Fairmont.

Removal of Tonsils by Electricity
Dr. Matthew F. C. Zubak, Wheeling.
Discussion:
Dr. G. P. Morison, Martinsburg.
Dr. G. A. Smith, Montgomery.

WEDNESDAY EVENING, MAY 21
Annual Convention Banquet
7 o'Clock
Toastmaster: DR. J. E. RADER, Huntington
Speaker: DR. R. F. LISCHER, Mascoutah, Ill.
"A Pen Picture of the Country Doctor."
Convention Ball
10 until 1 o'Clock

THURSDAY MORNING, MAY 22
General Session, 9:30 o'Clock

REPORT
A Brief Report on Crippled Children's Work in West Virginia
Dr. A. T. Post, Clarksburg.

REPORT
Why Nurses' Standards?
Miss May M. Maloney, R.N., Fairmont.

ORATION ON MEDICINE
Private Practice and the Public Health
Dr. George H. Bigelow, Massachusetts Health Commissioner, Boston.

(*Note*—A special meeting of the House of Delegates will be called at the close of the scientific program, for the purpose of electing officers for 1931.)

House of Delegates

The list of delegates whose credentials have already been certified to the executive secretary will be found below. To this list should be added the names of all past presidents, all councillors, and the present president, in order to obtain the complete roster. The county societies with their delegates and alternates are as follows:

Barbour-Randolph-Tucker—Delegates, E. M. Hamilton, Belington, and J. C. Irons, Elkins; alternate, B. I. Golden, Elkins.

Brooke County—Delegate, W. J. MacDonald.

Cabell County—Delegates, R. M. Bobbitt, J. A. Guthrie, F. C. Hodges, L. T. Vinson, and R. M. Sloan, all of Huntington; alternates, D. J. Cronin, G. D. Johnson, W. W. Strange, and W. C. Swann, all of Huntington.

Central West Virginia—Delegates, L. W. Page, Buckhannon, and C. C. Carson, Gassaway; alternate, M. T. Morrison, Sutton.

Doddridge County—Delegate, A. Poole, West Union.

Eastern Panhandle—Delegates, T. K. Oates and W. Ross Cameron, Martinsburg; alternate, A. O. Albin, Charles Town.

Fayette County—Delegates, Frank S. Harkleroad, Harvey, G. G. Hodges, Kilsythe, G. A. Smith, Montgomery, and J. M. Spinks, Mt. Hope; alternates, Claude Frazier, Powellton, Ralph Hogshead, Carbondale, W. D. Simmons, Glen Ferris, and J. F. Van Pelt, Oak Hill.

Grant-Hardy-Hampshire-Mineral — Delegates, W. M. Babb, Thomas Bess, and T. C. Giffin, all of Keyser.

Greenbrier County—Delegates, A. D. Ferrell, Ronceverte, and D. G. Preston, Lewisburg.

Hancock County—Delegate, F. B. Harrington, Weirton.

Harrison County—Delegate, J. F. Williams, Clarksburg.

Kanawha County—Delegates, D. N. Barber, Owens, G. H. Barksdale, Charleston, C. E. Copeland, Charleston, J. R. Shultz, Charleston, O. H. Bobbitt, Charleston, and B. H. Swint, Charleston; alternates, W. P. Black, Charleston, Robert King Buford, Charleston, G. G. Irwin, Charleston, and U. G. McClure, Charleston.

Lewis County—Delegates, M. D. Cure and George Snyder, Weston; alternates, S. H. Burton, E. T. W. Hall, and O. L. Hudkins, Weston.

Logan County—Delegates, C. A. Davis and S. B. Lawson, Logan, and W. H. Parker, Braeholm; alternates, F. E. Brammer, Dehue, and R. W. Roberts, Man.

Marion County—Delegates, E. W. Howard, Fairmont, J. J. Jenkins, Farmington, Philip Johnson, Fairmont, and W. A. Welton, Fairmont; alternates, L. C. Davis, Fairmont, C. T. Francis, Fairmont, and A. H. Stevens, Everettsville.

Marshall County—Delegates, W. P. Bonar and B. F. Bone, Moundsville; alternates, J. A. Streibich, Moundsville, C. S. Fortney, Hundred, and Mary Fortney, Hundred.

Mason County—Delegate, H. A. Barbee, Point Pleasant.

McDowell County—Delegates, A. G. Rutherford, Welch, W. B. Stevens, Eckman, and C. F. Hicks, Welch; alternates, H. G. Camper, Welch, and E. Vermillion, Welch.

Mercer County—Delegates, B. S. Clements,

Matoaka, W. H. St. Clair, Bluefield, and R. R. Stuart, Bluefield; alternates, David Littlejohn, Charleston, and C. C. Ballard, Gap Mills.

Mingo County—Delegate, F. B. Quincy, Williamson.

Monongalia County—Delegates, B. C. John, F. T. Scanlon, and G. R. Maxwell, all of Morgantown; alternates, E. F. Heiskell and B. M. Stout, of Morgantown.

Ohio County—Delegate, H. W. Bond, Wheeling.

Parkersburg Academy—Delegates, R. H. Boice, John T. Goff, T. L. Harris, and C. L. Wuhleman, all of Parkersburg; alternates, O. D. Barker, Parkersburg, C. E. Grimm, St. Marys, and C. E. Park, Parkersburg.

Preston County—Delegate, L. T. Browning, Kingwood.

Raleigh County—Delegates, M. C. Banks, Beckley, G. P. Daniel, Glen Daniel, W. W. Koiner, Beckley, and J. E. McKenzie, Beckley; alternates, E. S. Dupuy and W. W. Hume, Beckley.

Summers County—Delegates, R. G. Broaddus, Hinton, and G. E. Gwinn, Hinton; alternates, P. P. Pharr, Hinton, and D. M. Ryan, Hinton.

Taylor County — Delegate, F. S. Suddarth, Grafton.

Commercial Exhibitors

Companies and institutions that have thus far signed up for commercial exhibit space at the White Sulphur Springs meeting are as follows:

Max Wocher and Son Company, of Cincinnati.

National Drug Company, of Philadelphia.

Educational Film Supply Company, of Charleston.

Powers and Anderson, of Richmond, Virginia.

Kloman Instrument Company, of Charleston and Washington, D. C.

Mellins Food Company, of Boston.

Merrell-Soule Company, of Syracuse.

West Virginia State Department of Health, Charleston.

Petrolagar Laboratories, Inc., of Chicago.

R. B. Davis and Company, of Hoboken.

General Electric (formerly Victor X-Rray), of Chicago.

Sharp and Smith, Chicago.

Presidents of the West Virginia State Medical Association

Date	*Place of Meeting*	*Name*
1867	Fairmont	W. J. Bates*
1867	Wheeling	John Frissell*
1868	Grafton	John Frissell*
1869	Clarksburg	H. W. Brock*
1870	Parkersburg	J. W. Ramsey*
1871	Martinsburg	W. J. Bland*
1872	Wheeling	J. M. Lazzell*
1873	Parkersburg	R. H. Cummins*
1874	Morgantown	M. S. Hall*
1875	Point Pleasant	M. Campbell*
1876	Wheeling	A. R. Barbee*
1877	Clarksburg	E. A. Hildreth, Sr.*
1878	Weston	J. W. McSherry*
1879	Martinsburg	W. H. Sharp*
1880	Parkersburg	W. M. Dent*
1881	Wheeling	W. F. Van Kirk*
1882	Wheeling	J. E. Reeves*
1883	Grafton	B. W. Allen*
1884	Clarksburg	A. Gerstell*
1885	Weston	George Baird*
1886	Charleston	T. A. Harris*
1887	White Sulphur Springs	S. L. Jepson*
1888	Huntington	L. S. Brock*
1889	White Sulphur Springs	L. D. Wilson*
1890	Wheeling	S. H. Austin*
1891	Fairmont	S. H. Brownfield*
1892	Clarksburg	C. Shriver*
1893	Parkersburg	D. P. Morgan*
1894	Berkeley Springs	R. W. Hazlett*
1895	Davis	D. Mayer*
1896	Wheeling	J. A. Campbell*
1897	Charleston	N. D. Baker*
1898	Martinsburg	C. F. Ulrich*
1899	Weston	J. L. Dickey*
1900	Morgantown	C. S. Hoffman*
1901	Grafton	A. H. Thayer*
1902	Parkersburg	G. A. Aschman*
1903	Charleston	H. B. Stout*
1904	Fairmont	T. L. Barber*
1905	Wheeling	T. M. Hood
1906	Webster Springs	S. S. Wade
1907	Huntington	W. W. Golden*
1908	Clarksburg	F. Howell
1909	Elkins	V. T. Churchman
1910	Parkersburg	T. W. Moore
1911	White Sulphur Springs	C. A. Wingerter
1912	Webster Springs	C. O. Henry
1913	Charleston	F. L. Hupp*
1914	Bluefield	R. E. Vening*

1915 Huntington.....H. P. Linsz
1916 Wheeling.....A. P. Butt
1917 Fairmont.....J. E. Rader
1918 Martinsburg.....Sam Holroyd
1919 Clarksburg.....Robt. J. Reed
1920 Parkersburg.....H. R. Johnson
1921 Charleston.....J. H. Anderson
1922 Huntington.....Geo. A. MacQueen*
1923 Beckley.....John N. Simpson
1924 Wheeling.....R. A. Ashworth
1925 Bluefield.....Geo. D. Jeffers
1926 Morgantown.....James R. Bloss
1927 White Sulphur Springs.....C. R. Ogden
1928 Fairmont.....C. A. Ray
1929 Martinsburg.....H. M. Hall
1930 White Sulphur Springs.....W. E. Vest

* Deceased.

White Sulphur Springs

Dating back to the sixteenth century, what is now White Sulphur Springs was recognized by the Indians as a health resort, and here the red men brought their ailing to drink the curative waters. As early as 1772 the pioneer white settlers became familiar with the spring water at White Sulphur and recognized its curative value. Since 1818 White Sulphur Springs has been successfully operated as a watering place until today it is known as one of the most famous resorts of its kind in the United States.

White Sulphur has long been a favored vacation ground for many presidents of the United States, and has been visited by several of the crowned heads of European countries. In recent years many famous players of both the legitimate stage and the silver screen have vacationed and made temporary homes at the Greenbrier and cottages. Located in the heart of the Allegheny mountains, with beautiful drives and flower-bordered bridle paths, with three splendid golf courses, with unsurpassed tennis courts, and with a large indoor swimming pool, White Sulphur Springs has much to be proud of and much to attract the visitor.

Nearby, the federal government maintains one of its largest fish hatcheries, now given over almost exclusively to the propagation of rainbow, brook, and brown trout, from which several million fry and fingerlings are annually sent out for distribution in streams of the country. The fish hatchery is an interesting spot and is open to the public at all times.

The members of the Association who attended the 1927 meeting will remember the cordial hospitality shown to the doctors at that time. The magnificent Greenbrier Hotel was practically "turned over" to the medical profession and every meeting and assembly room was made available for the various scientific and Auxiliary meetings. Anticipating

Casino and Tennis Courts
White Sulphur Springs

a larger attendance than was had in 1927, the management of the Greenbrier has offered better rates than were available three years ago. The rates for the annual state meeting this year will range from eight to twelve dollars per day, on the American plan, which will include all meals. The complete schedule of rates will be found elsewhere in this issue of the JOURNAL.

For the West Virginia doctor who desires to get away for a rest of three or four days, for the doctor who wishes to "sit in" on one of the finest scientific programs the Association has ever had, and for the doctor who wishes to combine scientific knowledge with rest and recreation, the White Sulphur meeting is recommended as an ideal tonic.

Announcements

The sixty-third annual convention banquet of the West Virginia State Medical Association will be held on Wednesday evening, May 21, in the main dining room of the Greenbrier Hotel, White Sulphur Springs. There will be a cover charge of one dollar per plate for all persons registered at the hotel, and three dollars per plate for persons who are not registered at the hotel. Dr. J. E. Rader, of Huntington, will serve as toastmaster at the banquet, and Dr. R. F. Lischer, of Mascoutah, Illinois, will be the banquet speaker.

The annual convention golf tournament will be played over one of the eighteen-hole courses at the Greenbrier and a silver trophy will be presented to the winner. All entrants should communicate with Dr. R. H. Dunn, of South Charleston, W. Va.

The annual convention dance will be held in the ballroom of the Greenbrier on the evening of May 21, from nine until one o'clock, immediately after the convention banquet.

The annual election of officers will take place at a special meeting of the House of Delegates scheduled for the morning of May 22. This meeting of the house of delegates will be called immediately after the close of the scientific program that morning, and will be the last order of business of the convention.

All members of the House of Delegates are urged to be present at the opening meeting on Monday evening, May 19, when a number of important business matters are scheduled to come up. Five proposed changes to the constitution and by-laws, introduced at Martinsburg last year, will be acted upon at this meeting. These changes will be found elsewhere in this issue of the JOURNAL.

All members of the Association, their wives, and all guests are urged to register immediately upon arrival at White Sulphur. Association members should bring their membership cards for proper identification.

All members who expect to attend the White Sulphur meeting should make reservations at once. Reservation letters should be addressed to Mr. George O'Brien, assistant manager, Greenbrier Hotel, White Sulphur Springs, W. Va.

The special convention rates, ranging from eight to twelve dollars per day, on the American plan, will be found on another page of this issue of the JOURNAL.

The Scientific Essayists

The out-of-state speakers who will appear on the White Sulphur program on May 20–22 are listed below in the order of their appearance:

Dr. E. R. Arn, Dayton, Ohio.
Dr. Walter M. Simpson, Dayton, Ohio.
Dr. Carl A. Hedblom, Chicago, Ill.
Dr. Charles H. McCuskey, Mayo Clinic, Rochester, Minn.
Dr. M. Y. Dabney, Birmingham, Ala.
Dr. James H. Smith, Richmond, Va.
Dr. R. W. Whitman, Roanoke, Va.
Dr. Thomas O'Rourk, Baltimore, Md.
Dr. J. Morrisset Smith, New York, N. Y.
Dr. Gabriel Tucker, Philadelphia, Pa.
Dr. R. F. Lischer, Mascoutah, Ill.
Dr. George H. Bigelow, Health Commissioner of Massachusetts, Boston.

The members of the Association scheduled to appear on the White Sulphur program are as follows:

Dr. H. L. Goodman, Ronceverte.
Dr. B. S. Rankin, Kingwood.
Dr. Walter E. Vest, President, Huntington.
Dr. C. H. Clovis, Wheeling.
Dr. T. W. Moore, Huntington.
Dr. Thomas Nale, Edwight.
Dr. F. C. Hodges, Huntington.
Dr. Andrew E. Amick, Bluefield.
Dr. R. J. Condry, Elkins.
Dr. O. D. Barker, Parkersburg.
Dr. R. H. Boice, Parkersburg.
Dr. R. J. Wilkinson, Huntington.
Dr. C. Fred Fisher, Clarksburg.
Dr. E. C. Hartman, Parkersburg.
Dr. Matthew F. C. Zubak, Wheeling.
Dr. A. T. Post, Clarksburg.

White Sulphur Rates

Special convention rates for the sixty-third annual meeting of the West Virginia State Medical Association, to be held at White Sulphur Springs on May 20–22, 1930, have been secured from the Greenbrier Hotel there. These rates range from $8 per day to $12 per day, including both room and meals. The following is the complete schedule of rates as announced by the Greenbrier management:

Single room without bath, $8 per day; double and single room with connecting bath, $9 per day; two single rooms, connecting bath, $10 per day; double room with bath, twin beds, $10 per day; single room with private bath, $12 per day.

All of the rates quoted above are for each person or each occupant of a room. For instance, the rate for a double room with bath is $10 per day for each person occupying the double room.

In addition to the above rates, there will be a charge for the banquet on the evening of May 21 of $1 per person for all persons registered at the hotel. The banquet charge will be $3 per person for those who are not registered at the hotel and who come for the banquet alone. The room rates will apply for two days prior to the opening of the meeting and for two days after the close of the meeting for any members who desire to arrive ahead of time or remain after the convention closes.

Proposed Amendments

At the Martinsburg meeting of the West Virginia State Medical Association last May there were five amendments to the constitution and by-laws pro-

posed by Dr. C. A. Ray, of Charleston. These amendments will come up for final action at the White Sulphur meeting. The amendments proposed by Dr. Ray are published herewith:

"Section 1. The officers of this association shall be a President, three Vice-Presidents, an Executive Secretary, a Treasurer, twelve Councillors to be elected as provided in Section 2, and two Councillors-at-large, who shall be the retiring President and his immediate predecessor.

"Section 2. The officers, except the Councillors, shall be elected annually. The terms of the Councillors shall be for two years, one-half being chosen each year. No Councillor shall be eligible to succeed himself after four years as Councillor, but may be elected after two years' absence from the Council. All these officers shall serve until their successors are elected and installed."

"Section 3. The officers of this association shall be elected by the House of Delegates on the evening of the first day of the annual session, immediately following the President's address.

"Section 4. The retiring President shall be Chairman of the Council for the year following his term of office, and shall not be eligible thereafter for any elective office of the association except for delegate to the American Medical Association or Board of Publishers.

"Section 5. The President, the three Vice-Presidents, and the Treasurer of this association shall be members of the House of Delegates by virtue of their respective offices."

Another change in the by-laws of the association has been suggested, relative to the medical defense fund, and it is understood that the defense fund will be reinstated at White Sulphur. The council of the association went on record last December 28 as favoring the reinstatement of this fund and voted to recommend reinstatement to the house of delegates. The defense fund was abolished on January 1, 1930, in accordance with the action of the house of delegates at Martinsburg in May, 1929. However, the council last December authorized optional collection of the medical defense fee for 1930 with the assumption that the fund would be reinstated at the White Sulphur meeting.

Indications are that the old by-law known as Chapter 11 will be changed somewhat when the medical defense provision is reinstated therein. It has been proposed that the committee on medical defense consist of six members instead of three, and that the committee members be appointed by the incoming president each year, one member from each of the six councillor districts. It has also been suggested that, in case of litigation for malpractice, it shall be the duty of each individual committeeman to investigate the litigation only in his particular councillor district. If a case is worthy of defense, the committee member in the district shall assist and coöperate with the defendant in preparing his case, and shall report same at the next council meeting.

Among the other changes that have been suggested in the administration of the medical defense fund is a provision to pay the committeemen and all doctors serving as expert witnesses for their time and expense when they are called upon to assist or testify in a case, provided such physicians have to leave their counties or home towns for the purpose.

The last and perhaps the most important change that has been suggested is a provision to raise the necessary expenditure from $300 to $500 in any one case. Of this amount, however, only $100 can be expended for attorney fees; the remainder to be paid out, if necessary, in assisting the defendant to build up his case by providing expert witnesses and the like.

Whatever action is taken in regard to the medical defense fund will be introduced at the meeting of the house of delegates on the evening of May 19. This will enable the amendment to lay on the table the required time and to be presented for final action at the meeting scheduled for May 22.

COUNTY SOCIETY NEWS

Mercer County

A meeting of the Mercer County Medical Society was held in the directors' room of the Municipal Building, Bluefield, West Virginia, on March 28 at 8 P.M. There were twenty members and two visitors present.

A paper, "The Acute Ear," was read by Dr. Charles T. St. Clair, of Bluefield, and a paper, "Prenatal Care," was presented by Dr. E. M. Tanner, of Bluefield. Both essays were excellent and were freely discussed by a majority of the members present.

The following applications were voted on and the applicants elected to membership: Dr. F. N. Andrews, Bluefield; Dr. B. O. Myers, Maben; Dr. T. M. Turner, Springton; Dr. Dean L. Hosmer, Bluefield, and Dr. A. C. Echols, Matoaka.

An amendment to the by-laws, requiring the so-

ciety to meet once a month, was carried. In the future the society will meet monthly.

There was a motion to discontinue the medical defense fund and instruct our delegates to the state meeting to vote for a discontinuance.

Another motion was to have one hundred copies of the by-laws printed. A committee, composed of Dr. R. O. Rogers, Dr. John Bird, Dr. H. G. Steele, and Dr. R. R. Stuart, was appointed to go over the present by-laws and correct any errors.

A meeting of the Mercer County Medical Society was held in the directors' room of the Municipa Building, Bluefield, West Virginia, on April 17 at 8:15 P.M. There were twenty-four members and three visitors present. The application of Dr. W. E. Dickerson, of Princeton, was voted on, and he was elected to membership.

An invitation to the Clinch Valley Medical Society meeting to be held at Richlands, Virginia, on April 26, was received from Dr. C. B. Bowyer, of Stonega. The following men will be on the program: Dr. L. T. Royster and Dr. J. C. Flippen, of the University of Virginia; also Dr. Stuart McGuire, Dr. B. H. Gray, Dr. Manfred Call, and Dr. E. G. Williams, of Richmond. These men are to breakfast in Bluefield on the morning of April 26 and motor from there to Richlands. Our local doctors were invited to have breakfast with these men and go to Richlands if possible.

A paper on "Old Order Changeth" was read by Dr. A. H. Hoge, of Bluefield, and another paper, "The Use of Iodine in Goiter," illustrated by lantern slides and a moving-picture film, was read by Dr. Robert King Buford, of Charleston. Both of these papers were intensely interesting and ably presented. There was a free discussion by many of the men present. A vote of thanks was extended to Dr. Buford for presenting this paper.

R. R. STUART, Secretary.

Fayette County

The Fayette County Medical Society met at the Hill Hotel, Oak Hill, West Virginia, April 8, 1930, at eight o'clock. The meeting was called to order by the new president, Dr. R. P. Wood, of Oak Hill. The minutes of the previous meeting were read and approved. It was announced that fifty-nine physicians in the county are paid-up members, leaving only four physicians who have not paid their dues for the year.

The scientific program for the remaining months of the year was arranged. Dr. Lamb presented a paper on "The Biological and Chemical Nutrition in Children." Dr. W. P. Bittenger, of Oak Hill, presented a case report on an individual who died sixteen hours after the onset of severe illness, characterized by abdominal pain. Dr. B. F. Brugh, of the Montgomery Clinic, gave a case report of a patient with adenocarcinoma of the stomach who had an extensive Polya-Balfour gastrectomy and for the past three years has been quite well, having gained seventy-five pounds in weight and given birth to two normal children. These case reports were freely discussed by the members present.

C. W. STALLARD, Secretary.

Central Tri-State

The annual spring meeting of the Central Tri-State Medical Society will be held at the Hotel Prichard, Huntington, West Virginia, on the afternoon and evening of May 15, 1930. The meeting will get under way at two o'clock in the afternoon and a banquet will be given that evening between the afternoon and evening sessions.

The scientific essayists will be Dr. Ernest S. Cross of Baltimore, whose subject will be "Recognition and Management of the Commoner Cardiac Conditions Met With by the General Practitioner"; Dr. Willis F. Manger, of Philadelphia, who will talk on "The Relation of Sinus Disease to Pulmonary Infection"; Dr. Edwin P. Lehman, of the University of Virginia, who will talk on "Our Changing Conceptions of Gallbladder Disease," and Dr. William Mithoefer, of Cincinnati, Ohio, whose subject will be "Practical Thoughts Concerning the Nasal Sinuses."

JAMES S. KLUMPP, Secretary.

Kanawha County

Dr. Willis C. Campbell, of Memphis, Tennessee, was the scientific essayist at the April 18 meeting of the Kanawha Medical Society, which was held in the assembly room of the Public Library building, Charleston. His subject was "The Treatment of Affectations of the Lumbrosacral Region," and was illustrated with two reels of moving pictures. Dr. Campbell's talk was of unusual interest and brought forth a large amount of discussion. Visitors from Raleigh, Fayette, and Cabell counties were in attendance at this meeting.

Two other interesting papers were presented at the April 18 meeting. The program was opened

by Dr. Levi, of the Charleston General Hospital, who presented a case report. Dr. Campbell was followed by Dr. M. I. Mendeloff, of Charleston, who gave a paper and case reports on "Considerations of Nephrosis." Both of these papers were thrown open to discussion.

Dr. J. G. Lyerly, of Richmond, Virginia, was the visiting essayist at the March 27 meeting of the Kanawha Medical Society, which was held in the Public Library building. His subject was "Acute Cranio-Cerebral Injuries with Special Reference to Diagnosis and Treatment." His paper was illustrated with lantern slides. Dr. Robert King Buford, of Charleston, was the other essayist, presenting a most interesting paper on "Watkins Interposition Operation for Procidentia: End Results." Dr. Buford's paper and Dr. Lyerly's paper were both discussed at considerable length.

The next meeting of the Kanawha Medical Society will be held on the evening of May 6, when Dr. G. Paul LaRoque, of the Medical College of Virginia, Richmond, will present a scientific paper. Prior to the meeting there will be an informal subscription dinner at six o'clock at the Daniel Boone Hotel, Charleston, for the alumni of the Medical College of Virginia. Letters are being sent out, but the list of graduates is incomplete. All alumni of the school are urged to attend.

D. N. BARBER, Secretary.

Monongalia County

One hundred members of the Monongalia County Medical Society, of the faculty of the University school of medicine, and students in the medical school attended the lecture by Dr. Harry Stuckert, professor of obstetrical surgery at Jefferson Medical College, Philadelphia, which was held at Martin Hall, Morgantown, on the evening of April 1, 1930. Dr. Stuckert's subject was "Fibroid Tumors from Obstetrical and Gynecological Point of View."

In connection with Dr. Stuckert's lecture, the six-reel film on obstetrics, made by Dr. Stuckert and purchased by the state association through the state health department last year, was shown to the members and visitors in attendance. A lengthy discussion of great interest was given by the members of the society at the conclusion of Dr. Stuckert's address and film. Dr. Stuckert was introduced by Dr. Donald M. Post, of Morgantown, president of the society.

G. R. MAXWELL, Secretary.

Ohio County

The regular meeting of the Ohio County Medical Society was held at the Elks' Club in Wheeling on the evening of April 18. The scientific essayist of the evening was Dr. R. Wesley Scott, of Cleveland, Ohio, who presented a most interesting paper on "Facts on the Heart: Clinical and Pathological Observations on Two Thousand Autopsied Cases." The paper was illustrated with lantern slides. Discussion was opened by Dr. John W. Gilmore and Dr. H. R. Sauder, both of Wheeling.

Dr. W. E. Lower, of the Cleveland Clinic, presented the scientific paper at the March 28 meeting of the society, on the subject "Problems of the Prostatic: Another Viewpoint." Discussion was opened by Dr. J. Schwinn and Dr. R. D. Gill. A buffet lunch was served at this meeting.

Dr. George Wilson, of the University of Pennsylvania, Philadelphia, presented an interesting scientific paper at the April 4 meeting, on the subject "Brain Tumor," illustrated with lantern slides. The discussion was opened by Dr. R. U. Drinkard and Dr. J. O. Rankin.

H. W. BOND, Secretary.

Cabell County

Dr. George M. Lyon, of the Cabell County Medical Society, Huntington, was one of the two scientific essayists who appeared on the program of the Johns Hopkins Medical Society meeting at Baltimore on the evening of April 14, 1930. At that time Dr. Lyon presented a paper on "Probable Aqueduct Obstruction Occurring in Meningococcus Meningitis and Successful Removal by Unusual Method." He was preceded on the program by Dr. Arthur Grollman, of Baltimore, whose subject was "Studies in the Cardiac Output of Man."

Central West Virginia

The regular quarterly meeting of the Central West Virginia Medical Society was held at the M. E. Church in Richwood on the evening of April 23, with a good attendance. The meeting was preceded by a banquet at seven o'clock, which was greatly enjoyed by the members and visitors present. Immediately following the banquet the scientific program was taken up.

The scientific program was opened by Dr. R. H. Paden, of Charleston, who talked on "The Relation of the Physician and Hospital to Public Health." He was followed by Dr. Carl F. Raver, of Charleston, who talked on "Vital Statistics as Compiled in

the State of West Virginia." Both Dr. Paden and Dr. Raver are connected with the state health department.

Dr. J. T. Graham, of Richwood, was next on the program with a paper on "Acute Nephritis in Children," demonstrating two cases. Discussion of this paper was opened by Dr. L. O. Hill, of Camden-on-Gauley. Dr. Graham was followed by Dr. A. L. Jensen, of Richwood, who gave a paper on "Cranial Injuries," with demonstration of an unusual case. Discussion of Dr. Jensen's paper was opened by Dr. J. A. Rusmissel, of Buckhannon. The program was concluded with a short talk by Mr. Joe W. Savage, state secretary, who discussed the coming meeting at White Sulphur Springs and also talked briefly about the medical defense fund.

C. C. Carson, Secretary.

HOSPITAL NEWS

National Hospital Day

Plans for the observance of National Hospital Day, May 12, already are being considered by many hospital administrators, especially by those who have had programs in the past and who know from personal experience the practical results that follow this "day."

The 1930 observance will be the tenth national hospital day. In looking back over this movement, which was established by *Hospital Management* in 1921, veteran hospital administrators are impressed with its remarkable spread and with the fine results in the way of public interest and support which it has developed through the field generally as well as in specific ways in individual institutions.

A number of state hospital associations have begun to plan for a celebration in an organized way on a state-wide basis. Indiana is among the first to do this, which, incidentally, is only to be expected since the Indiana Hospital Association, which was organized a few weeks after the idea of a national hospital day was broached, was the first state association to endorse the movement and to coöperate with it on an association basis. Illinois and Wisconsin hospitals saw the motion pictures of the celebration at Bergen Pines which won the A. H. A. award in 1929, at their meetings last month, and have begun the task of enlisting hospitals in organizing programs for 1930.

The American Hospital Association committee on National Hospital Day, under the chairmanship of Dr. Joseph R. Morrow, superintendent, Bergen Pines, Ridgewood, N. J., has begun active preparations to have a larger number of hospitals participating in the May 12 observance this year than at any previous time.

In view of the misunderstanding and suspicion of hospitals, fostered in recent months by speakers and writers, every hospital administrator should do his or her part in creating good will and friendship by having the best possible program for May 12.

In telling of the start of the efforts of the A. H. A. committee to obtain the coöperation of all progressive hospitals for 1930 National Hospital Day, Dr. Morrow recently wrote:

"We have written to the presidents and secretaries of the hospital associations and of the Canadian hospital associations, asking the aid of every organization in putting across our program for this year.

"We have also written to a number of the larger hospital supply houses, and from them we have received a most gratifying response. There are others to whom we are writing, and I am sure that this class of organizations will make a fine showing.

"Before National Hospital Day last year we prepared motion pictures of some of the year's activities at Bergen Pines. One of special interest is of Santa Claus at Bergen Pines—his activities prior to his coming here, his visit to the children, etc. We used these films all over the county and they surely stimulated the interest of the various organizations and citizens in social welfare. Then, too, the many pilgrimages and visitations made by the different organizations increased their interest and many of the general public learned the whys and wherefores of an institution of this kind. All of this helped toward the wonderful showing we made."

For the benefit of newcomers to the hospital field it is recalled that three presidents of the United States have endorsed National Hospital Day and have urged the fullest coöperation of the public with the hospitals in this educational movement.

Hospital administrators desirous of making the most of National Hospital Day are referred to the accompanying suggestions for a successful observance, including a well-planned, carefully detailed program, and ample publicity of all kinds, including individual invitations. The distribution of a bulletin or some form of printed matter relating to the work and plans of the hospital will be well worth while and is essential to the best results.

The program itself may range from a period of "open house," say, from 2 to 4 P.M., to the most elaborate arrangements the hospital may care to

make. The prize-winning program of last year of Bergen Pines, Ridgewood, N. J., occupied several days and included exhibitions, drills, floats, announcements at churches, clubs, by radio, etc., and even an aëroplane ambulance that carried a patient to the hospital.

An increasing number of hospitals are winning the coöperation of high schools and grammar schools by poster contests. Art teachers and others will be glad to assist in such a contest, as hospitals have learned in the past. It would be well to have a few specific conditions drawn up to guide the contestants as to subject matter, etc., and the awarding of prizes should be made on National Hospital Day.

Hospitals in larger cities will profit by the experience of Columbus, Ohio, where the hospitals organized a council, the first goal of which was a joint city-wide observance of National Hospital Day. Incidentally, such a coöperative program is most effective for larger cities where hospitals are relatively of less interest to the public than institutions in smaller communities. Chicago hospitals, under the guidance of the Chicago Hospital Association, are organizing a joint program this year.

As an indication of the response rospitals may expect from newspapers on National Hospital Day, a state chairman reported the receipt of many marked copies of newspapers throughout the state to which announcements of National Hospital Day programs had been sent.

A number of hospitals plan to display hospital posters throughout the buildings on National Hospital Day.

Here are four steps toward a successful National Hospital Day program:

1. Decide upon details of program, such as reunion of babies born in hospital and their mothers; displays in laboratory, kitchen, x-ray, operating rooms, etc.; reception by members of board or auxiliary; "open house"; reunion of alumnæ; reception to high school girls under direction of nursing staff, etc. Consider such details as hours, decorations, refreshments, assignment of guides, hostesses, etc.

2. Write letters to mayor, governor, church authorities, or leading officer of other group under which hospital functions. They will be glad to endorse National Hospital Day again. Use these letters for publicity.

3. Prepare notices for daily and weekly newspapers, church, club, and other publications, telling of objects of National Hospital Day, details of your program, and inviting the public to visit the hospital May 12. Emphasize that no donations will be asked or expected then, and that National Hospital Day is merely a day on which the public and the hospital are to get better acquainted with each other. Send letters or invitations to former patients and selected people of the community.

4. Use such means of publicity and advertising as are represented by merchants' windows, radio, announcements at churches, clubs, association meetings of various kinds, slides in movie theaters, posters, signs on trucks, automobile stickers, etc.

BOOK REVIEWS

Treatment of Skin Diseases

The Treatment of Skin Diseases, by Noxon Toomey, M.D., B.A., F.A.C.P., has just been published by the Lister Medical Press, of St. Louis, Missouri. It is the third volume of a treatise on diseases of the skin under the heading, "Principles and Practice of Dermatology." The first two volumes dealt with pathology and diagnosis. Volume III consists of 512 pages, with table of contents and a comprehensive index.

The author, Dr. Toomey, is late instructor in dermatology at St. Louis University, major and surgeon of the 138th Infantry, Missouri National Guard; dermatologist to the terminal railroad, and sometimes editor of the *Urologic and Cutaneous Review*. In his preface he states that the methods of treatment described in the book have been adequately experienced by him in his private and dispensary practice of the past 15 years.

The book includes a description and method of treatment of all known skin diseases. A number of original contributions to the treatment of skin diseases are to be found. Dr. Toomey's is probably one of the most thorough and comprehensive texts that has yet been published on cutaneous therapeutics.

The Normal Diet

The Normal Diet, third revised edition, has just been issued by the C. V. Mosby Company of St. Louis. The author is Dr. W. D. Sansum, M.S., M.D., F.A.C.P., of Santa Barbara, California, and the book itself is a simple statement of the fundamental principles of diet for the mutual use of physicians and patients. In his preface Dr. Sansum states: "Diet errors are very common, and such errors are undoubtedly responsible for many minor ailments as well as some of the more serious ones.

I therefore believe that a simple statement of the fundamental principles underlying the selection of a normal diet may fill a definite need.

The Normal Diet deals with eight known fundamental principles which should be considered in selecting the normal diet. They are enumerated as follows:

1. The normal diet should contain an adequate amount of the bulky, residue-containing foods to insure natural movement of the bowels.
2. The normal diet should contain an adequate amount of the alkaline-ash foods to balance the acid-ash foods.
3. The normal diet should contain an adequate amount of the starches and sugars to prevent the acetone type of acidosis.
4. The normal diet should contain an adequate number of food units, or calories, to maintain the individual under usual activities at a normal weight for the age, sex, and height.
5. The normal diet should contain an adequate amount of protein.
6. The normal diet should include an adequate amount of the mineral-containing foods.
7. The normal diet should contain an adequate amount of the vitamins.
8. The normal diet should contain an adequate amount of fluids.

PUBLIC HEALTH

Scarlet Fever

Scarlet fever is especially a disease of temperate climates, where it is practically always present in the large cities. In the United States it affects particularly the northern states, being more prevalent there than in southern states.

With the opening of the schools, the autumn months are always signalized by a marked increase in the number of cases of scarlet fever reported to health officers, each month showing a progressive increase until the maximum is reached in December or January. In July and August there is a great decrease in the number of cases reported, the number being very much less than in the winter months.

While scarlet fever may attack persons of any age, not even the very old being exempt, it is primarily a disease of infancy and childhood. The susceptibility to the disease decreases rapidly with increasing years. The greatest susceptibility to scarlet fever falls between the second and the ninth year of age, over sixty-six per cent of the deaths from this cause taking place in this age period.

It is desirable that the symptoms of scarlet fever should be generally known so that all persons may be on their guard against the disease. Its principal symptoms consist of sore throat, fever, rapid pulse, the breaking out of a bright-red rash over the body and extremities, and usually swelling and tenderness of the glands of the neck. These symptoms are followed by a stage known as the period of desquamation, or peeling, during which the outer layers of the skin are shed in scales, flakes, or patches.

The disease strikes suddenly. A child, apparently in the best of health previously, is seized with sore throat and fever, very often with vomiting, and, in infants, convulsions. The fever mounts rapidly, the skin feels unusually hot and dry to the touch, the tongue is furred, the throat is parched, and the face is flushed and somewhat bloated. Cough and running of the nose are usual. This stage usually lasts from twenty-four to thirty-six hours.

The rash generally appears on the second day, but may be deferred for forty-eight hours. On the other hand, it may begin to come out a few hours after the first symptoms. It appears first on the neck and chest as a breaking out of fine, scattered, bright points implanted on a scarlet flush. It spreads rapidly, so that by the evening of the second day the entire body may be covered. The eruption at its height has a vivid scarlet hue and is more marked on the inner surfaces of the arms and legs and where joints make folds of the skin, as in the groins and at the elbows. After persisting at its severest for two or three days, the rash gradually fades, the fading being accompanied by a progressive fall of the fever. With the fading of the eruption and the fall of the fever, the skin looks stained and feels rough. Gradually its outer layers begin to be thrown off, the process usually beginning about the neck and chest.

Inflammation of the throat is a prominent symptom in scarlet fever. This is present in various grades, and may vary from redness of the hard palate and inner surface of the cheeks, with some swelling and more vivid redness of the soft palate and tonsils, to the condition known as "diphtheroid," with much increased swelling and inflammation of the tonsils and neighboring parts.

Scarlet fever shows marked variations in its severity. There are mild or abortive cases in which the rash is scarcely visible, or in which the sore throat and the "raspberry tongue" may be the only signs of the disease. In certain epidemics, particularly in

schools, this type of the disease may predominate. On the other hand, the symptoms may be so severe that the patient, overwhelmed by the poison of the disease, may die within twenty-four to thirty-six hours, with high fever, great restlessness, delirium, and convulsions.

Scarlet fever is distinguished by the variety and severity of its complications, which may develop in cases apparently mild at the outset. The most common of these are inflammation of the kidneys (nephritis), ear complications (middle-ear disease), inflammation of the lining membrane of the heart (endocarditis), inflammation of lymph glands (adenitis), and joint affections. Of these, nephritis and ear complications are by far the most common.

While the average period of incubation of scarlet fever (*i.e.*, the period between exposure and the appearance of symptoms) has been stated to be from two to four days, probably with a maximum of seven days, a few examples of what seem to be longer periods have been recorded.

Scarlet fever should always be under the care of a physician.

Paris Green Diluents

The use of paris green as a larvicide for malaria-carrying mosquitoes, with hydrated lime as a diluting agent, has become standard practice in this country. According to the United States Public Health Service, the larvæ of the anopheles mosquito, being surface feeders, ingest particles of paris green which are supported by the surface tension layer of the water. Since these particles are relatively heavy, the floating period is presumably short. The lime, being slightly soluble and moderately heavy, can not be expected to add materially to the capacity of the paris green to remain on the surface of treated water. Workers of the Public Health Service report the finding of small larvæ of mosquitoes after two days from the time of dusting. The question has arisen as to whether some highly insoluble and lighter substance would not keep the larvicide on the surface longer, delaying the reappearance of the larvæ and, therefore, serving as a more useful diluent. The stearates of calcium and aluminum have these physical properties, and results of a few experiments with these substances lend some basis to the belief that they may be useful for this purpose.

The results of a recent study by the United States Public Health Service indicate that the stearates of calcium and aluminum, when substituted for hydrated lime in the dilution of paris green, prolong the period from the time of dusting to the reappearance of anopheline mosquito larvæ from an average of three days to an average of between five and six days.

Recommendations Relating to Public Health

In a report recently submitted to Congress, Surgeon General H. S. Cumming, of the United States Public Health Service, calls attention to the fact that the protection and promotion of the public health are of great importance to the nation. It is stated that this is true from several aspects, among the more obvious of which may be mentioned efficiency, economy, and national security. It is, therefore, necessary to recommend from time to time additional measures not only to prevent the introduction and spread of diseases, but to conduct studies relating to the cause, means of spread, and methods of prevention. Studies of public health problems are becoming increasingly complex.

The highly specialized professional personnel of the Public Health Service is segregated into a compact unit for administrative purposes and is so organized that it can be drawn on for expert help whenever it is needed in any other branch of the government. This plan of organization involves a minimum of expense and insures uniformity and accuracy of method. The further development of this system would place at the command of the government one source from which each requirement for such services could draw and would obviate the building up of new professional units in the various departments at large overhead expense and with inevitable duplication of work and lack of coördination.

It is important from the health standpoint for this policy to be extended so as to apply to all agencies of the government not specially provided with medical and sanitary services. The need to strengthen the health activities of the government and to bring about their proper correlation has long been recognized. In order to insure the orderly development of federal health work and to prevent waste, authority to this end should be established by law.

A number of studies which come within the scope of field investigations of public health could be profitably developed. It is felt that the expansion of the cancer research program would be of decided advantage. Investigations relating to industrial hygiene, including air pollution and its effect upon health, should be extended. More intensive studies of mental diseases from the standpoint of biochem-

istry and endocrinology should be undertaken. Studies of heart disease, which is one of the major causes of premature death, should be instituted. Investigations relating to undulant fever, including its epidemiology and prevention, should be increased. Research on several child hygiene problems is urgently needed. To meet the constant increase in population and the growth of industry, enlargement should be made of the studies of stream pollution now being conducted. Provision for increased facilities at the hygienic laboratory are recommended to provide for additional studies of important problems relating to public health.

The plan of applying practical public health knowledge to the people of rural sections through the development of efficient whole-time county health departments is receiving wider interest and attention as its benefits and advantages become more generally recognized.

There is no doubt that such local health organizations provide the machinery through which all public health activities may be conducted in proper sequence and relation one to the other, thereby insuring to communities a well-balanced, comprehensive and general program of public health work well adapted to their needs. These health departments in doing their work also perform service of state-wide and nation-wide importance in the prevention of intrastate and interstate spread of disease.

In view of the proved effectiveness and practicability of coöperative rural health work between national, state, and local health agencies, it is recommended that favorable consideration be given to some form of general legislation that would place the rural health work of the government upon a definitely coöperative basis and provide for appropriations in proportion to the needs and importance of such work.

Typhoid Carrier Problem

Water-borne typhoid infections no longer hold first place in West Virginia, it was stated by Dr. David Littlejohn, of the state health department, at the recent water purification conference. The "typhoid carrier" is the big problem in West Virginia now, he stated, and one that is hardest to handle.

Dr. Littlejohn stated that improvement in water supplies, both in cities and in rural areas, in recent years had helped materially in bringing down the typhoid death rate in this state from 20.8 per 100,000 in 1925 to 11.4 per 100,000 in 1929. However, he said, West Virginia still ranks among the states having a high typhoid death rate, only five other states having higher rates.

Referring to the "typhoid carrier," Dr. Littlejohn pointed out the case of Charleston, where the development of a large number of cases of typhoid fever within a few weeks caused the health authorities much concern. Various sources of possible infection were examined, including the city water supplies, but none gave a clue to the source of the infection, and it was finally decided that a "carrier" or "carriers" handling food in some section of the city was the source. The city authorities are carrying on a general examination of all the two thousand food handlers in the city with a view to locating the source of the present large number of cases. So far, the investigation has revealed several "carriers," any one of whom may be a source of the infection.

Effect of Movies on Sight

The League of Nations is undertaking an exhaustive study of the effects that motion pictures may produce on the eyesight of children and young people, it was disclosed recently by the National Society for the Prevention of Blindness.

"The widespread use of the cinema throughout the world now, its additional possibilities for visual education with the introduction of talking pictures, and its increased use in schools and colleges has called forth the present investigation," explained Lewis H. Carris, managing director of the society.

"Under the supervision of Dr. Lucien de Feo, director of the International Educational Cinematographic Institute of the League of Nations, the study will seek to determine whether any disturbances of sight are provoked by watching a brilliantly lighted screen in absolute darkness, the maximum time that a show can last before producing a tiring effect on sight, and similar answers which may influence the use of motion pictures for juvenile education.

"Leading scientific authorities throughout the world are being consulted. At the request of Dr. de Feo, a response to the inquiry has been made from the United States by Dr. Park Lewis, of Buffalo, N. Y., who is vice-president of the International Association for the Prevention of Blindness as well as vice-president of this society."

Concerning the opinions expressed in the report which Dr. Lewis forwarded to Geneva, Mr. Carris said that neither he nor Dr. Lewis felt at liberty to make them public until the Cinematogrophic Institute completes its research.

CURRENT COMMENT

From the Lay Press

Ladies and Gentlemen of the Radio Audience: This program comes to you from station WVSMA, broadcasting through THE JOURNAL. The hour is sponsored by Protestodon't. Protestodon't, as you know, is the name of a preparation which doctors use on themselves to enable them to ignore all the irresponsible, unjust, and deprecating articles that appear in the prints of the day.

You must know there is a thin film of dust and monotony that gathers on all the magazine editorial offices. This film is composed of tobacco-smoke stains, newspaper slang, or what have you? Anything sensational, even if unfair, and other débris makes many a magazine article highly discolored. Protestodon't removes this by not giving a whoop. Use Protestodon't twice a day. It is pleasant; has no grit or hard feelings, considering the usual source. Use Protestodon't, and attend a good medical conference twice a year.

Today we listen to Grace Robertson in *Liberty* for April 5 with "Doctors and Their Ethics"; Walton Green, *Liberty* of April 19, "The Little Brown Nurse," and Frank O'Malley, *Cosmopolitan* for May, "Even Doctors Must Live."

Taken together, they form "The Hot-Air Megaphone Service" for imparting to the public what is supposed to go on behind the scenes in medical and hospital service.

Grace Robinson, for instance, has been looking about through the archives of the Congressional Library or some other seat of learning, probably accompanied by some medical person who got a deal with no face cards in it and became sore about the matter. What she has not found is probably not worth anything. After you get through reading what you yourself are like, you will go out and apply for a job driving an ox team. You won't want to continue being a doctor at all. It is an unworthy vocation. It is wonderful to think that this seething mass of humanity, with all its lowly aims, can ever so often save itself from being a total loss by producing a militant person like Grace Robinson. We will bet she knows more about what you ought to tell and how you are chained and fettered with a lot of pledges and oaths and formalities than you know. There are a lot of things we do that, evidently, we have been doing subconsciously and did not know it. It is time to wake up and redeem ourselves—so you had better step out and buy a *Liberty* at once.

For instance, you are a regular Mussolini when you enter a house and act like you own it. Maybe you will tell people what is the matter with them, and maybe you won't—depending on what you had for breakfast and how you feel about it. You may act as nice as if you were some kind of a god, or you may be deceitful, vain, jealous, and everything else that marks a shallow mind. But the worst thing you have been doing is keeping things to yourself. You ought to tell what you know. A nice thing for you to do would be to insert an advertisement in the paper each day and give out what is the matter with your clientele. Grace must have been strong for these "truth" parties when she was a youngster. As a matter of fact, nothing in the way of venereal crimes from covering them up could happen in West Virginia. We have to report them all, and with them the source of contagion. One thing about Grace's recital is that she gives no personal experiences. This is refreshing. Considering the matters dealt with, it would hardly be a safe thing to do. Medical men spend almost as much time in deciding whether a patient should know what is the matter with him as they do on his diagnosis. It is a delicate matter. The physician has to make up his mind which way it shall be. Much depends upon it. Mistakes will happen. The essential part about the matter is that either way does not benefit the doctor at all. The secrecy Miss Robinson makes so much over, either in private life or on the witness stand, never profits the doctors nor the State of New York Medical Society nor the American Medical Association. Whatever secrecy is held, it is done solely in the interests of the patient. Like all such medical writers, Miss Robinson did not mention preventive medicine, which is conducted in direct antithesis to all her article. Preventive medicine is a system of medicine designed to protect the well, the innocent and the healthy against all contagion and all disease. It is a direct answer to her diatribes and is the greatest and only genuine altruistic movement ever proposed by any calling in the human scene whereby a vocation sacrifices its own reverences and own personal gain in the interests of humanity.

Walton Green must know some nurse who fits in with his ideas of all that a woman ought to be, and so he thought maybe it might be a nice thing to do to memorialize her in a story. If he does not know of such a nurse he has a good imagination. Maybe he has a doctor friend he can call in for help

on occasion, too. In any event, he has obtained a working knowledge of remedies, technique, and the symptoms of appendicitis somewhere. The article is rather amusing to read, because you can't quite get it out of your head that somebody, somewhere, is unloading quite a little off his chest onto the vicissitudes of a general public circulation. You have been accustomed to meeting one or more of your colleagues in consultation, arguing a little over the case at hand, then giving out a plan of action, telling it, and everybody getting their hats, anxious to be on their way. The patient was usually benefited, or, if not that, the family was given to understand what could be expected. Consultations in eighty per cent of the cases any more are sought by the attending physician. He does not in any sense regard them as a reflection on himself; neither does the laity. He can also desire one for a check-off on himself in case a fatal termination is feared. The family can ask for whom they please, and in an increasingly large number of cases they get their choice. Show us some other vocation that does this. Imagine a lawyer submitting his work to some other lawyer he may not know more than casually. Fancy a portrait painter having a rival step in on him to review his work. Picture a magazine writer submitting her work to some other person in the field, to tell her whether her work is inflaming or otherwise. They do not do it anywhere but in medical circles.

But, according to this writer, consultations are affairs harkening back to mediæval times. The patient's welfare is often not even considered, but the whole thing is alleged as being to protect the physician. Facts are often concealed and a general air of misrepresentation is prevalent. We have been familiar with consultations for three decades, and that any such atmosphere as she describes prevailed is absolutely apposed to our experience. Yet she broadcasts her views to over two million people. We heartily wish the American Medical Association was as strong an organization as she depicts. We wish doctors were held as close as she describes. It would be better for everybody. The final word in regard to her article is that she does not know that. We think perhaps the whole thing could happen somewhere. It may be that the Great One has existed some place. Nor will we attempt to deny that, human nature being such as it is, personal rivalry can be eliminated from a hospital any more than it can be eliminated from a church or a university, or, according to ancient biblical history, from amongst the very elect themselves.

"The Little Brown Nurse" does not particularly involve ability or good works. The object of the story is to try to indicate that routine in a hospital can result in loss of life; that, in some hospitals, their size has become so stupendous, their viewpoint so standardized, their performances so much like those of a big machine, that routine has necessarily become such a fetish and emergency calls require such a break in the recognized pattern that a patient might die before relief could be instituted. Probably it has happened; but, wherever we have seen the operation of a system of routine, a break could easily be made into it at any time, and whenever a catastrophe occurred it could be charged up to an individual. No one can make over human nature. An interne or a regular doctor or nurse may be either a procrastinator or careless of responsibility; they may move slowly and still be correct, as far as the rules are concerned. We trust, however, that Mr. Walton Green will be around somewhere in a big hospital and see, with his own eyes, how far out of line is his article. All the agencies for quick relief are big orders. They have been cut down to pure essentials; still, they are necessarily complicated. The technique of transfusion is no small matter. If one had a lot of doctors housed in a place nearby, the matter would still be involved; but we have seen doctors and nurses offer themselves to speed things up.

The recital of "The Little Brown Nurse" sounds quite romantic and altogether heroic to the average layman. It presupposes at once, however, that a nurse knows every bit as much as a doctor. Emergencies are never alike. They call for judgment founded on experience. According to some judgments, camphor in oil will not perform miraculous comebacks. In fact, its reputation for such performances is somewhat debatable. It is true that our little brown friend called a doctor under trying circumstances, but she acted herself. This made the whole thing her responsibility. In this case it turned out all right. In another case it might be the wrong thing and result otherwise.

In many hospitals the nurses are so rigidly trained, their courses so elaborate, their schooling so intensive, their examinations so severe, that they are actually medically educated. In other words, they know the reasons for doing a thing, and what is expected of its action, along the same lines, in a way, as a doctor. In other hospitals they are educated to follow orders as written and to never deviate. They are automatons. It is plain to be seen that the ques-

tion is a grave one, and an article like "The Little Brown Nurse," probably written with good intentions, could put the idea in a lot of people's heads that the nurse is just as much to be relied upon as is a doctor, and that it is up to a nurse to decide whether to go ahead on her own responsibility or not. We think most nurses would not care to have such a responsibility placed upon their shoulders. A capable person was "The Little Brown Nurse," but a person lacking in capability might decide to do a little on her own "hook," regardless. Discipline and routine would be at an end if such was the rule, and in the end, we believe, more patients would suffer than would profit.

Frank O'Malley is a humorous person. He has had a varied and interesting contact with the medical world, and, like Irvin S. Cobb, has good-naturedly turned it to profit, being a writer, and made his so-called four incurable maladies bring in a little revenue. He speaks of doctors frequently as being "racketeers," intimates the A. M. A. would have gone into bankruptcy, had it not been for him, and has a merry time of it, describing some of the holier places in medical emporiums in language so truly disguised that he might as well have come out and given the names. But, as we fancy he is going to have to go back to them some day, Frank does not want to run any unnecessary risks.

Frank O'Malley's burden is that doctors are too much like bank officials when you go to ask for a loan with insufficient collateral. They are a little too cold, and the old days of slapping one on the back and saying "Well, Frank, old top, how is everything?" has been replaced by a white angel stepping out and asking you what is your financial rating and if you have ever had your suprarenals removed or are divorced. He says they work for you for a diagnosis now and do not know anything to give you for treatment, whereas they used to give you a whole lot of treatment and did not know the diagnosis. By such "wise-cracks" he hopes to be mentioned along with Will Rogers and Irvin S. Cobb; but he won't. Some way or other, you feel Frank has been to a doctor since he wrote his article. Maybe he hasn't, but we will bet he wanted to. Begging his pardon, we think he is one of those fellows who make a doctor's life a burden by always wanting them to find something wrong with him; so they gave him four incurable maladies, thinking he might be satisfied and never come back. Being a humorist, Frank can't take a joke; so he has believed that everything anybody else says is serious. The doctors he is making so much fun over were tender-hearted and could not just come out and tell him a lot of what he thought was wrong with him was in his head, so they have used all their instruments of precision on him, partly to satisfy him and partly on the theory that maybe there might be something wrong with him after all. All hysterical cases are bugaboos to medical men and they always want to give the patient the "breaks." If Mr. O'Malley only knew it, doctors consider some cases which are running around to everybody as worth more than ten dollars a consultation. To hear an old chronic like Frank go over his trials is worth more than ten dollars a "crack," and so each man he went to see felt as if he ought to distribute the load like insurance companies do a big risk, and so he was sent to five other men by one consultant. Each one of these received ten dollars. That made it sixty. One man figured it would be worth one hundred to listen to Frank tell it all. In the end, we think, Mr. O'Malley came out forty dollars ahead, which, as the Listerine advertisements say, he can now spend on other things. Since 1917 Frank O'Malley has been seeing doctors. That implies faith. We will bet he keeps on seeing them; that he has a warm place in his heart for the medical profession, and that, considering the happiness he gets out of it all, consulting doctors is better than going to Europe and not nearly as expensive.

We have called attention to these three articles because they will go all over the United States and will be read by millions. They will be variously construed, and perhaps only five per cent of those that read them will remember them. But we know, from our own experience, that they were read with great interest by a lot of people, who asked us, in a serious way, how much truth there was in them. Particularly did the notion that one might die in a hospital through the results of routine seem to have been impressed upon their minds.

We know that all these articles pick out little things here and there and exaggerate them. We know that a death from a tonsillectomy will get on the front page. Anything we do like that gets on the front page. The thousands of good examples of our work are never on any page, because we elect to be modest and do no advertising. We should see to it that, in a dignified way, we have articles to match these in the various periodicals.

Liberty magazine is alleged to be controlled by the Chicago *Tribune*, and *Cosmopolitan* is owned by the Hearst publications, which have recently had

conflictions with Dr. Morris Fishbein over the cancer problem in California and elsewhere. There are, however, a number of publications and papers, such as the New York *Times* and the New York *Tribune*, which understand us and give us our dues. We should always remember that.

We remember when *Liberty* dropped down into the periodical world. Some admirers of the *Saturday Evening Post* wept in a corner, feeling it was all over with the "old reliable." The *Post* has gone on, getting heavier and heavier until it looks like obesity or even diabetes is just around the corner for it, while *Liberty* has gone in for reducing and evidently is on a diet. We have mistaken it for a good-sized theatre program. So, perhaps it does not pay to print all the thrilling articles which seek to expose venerable institutions, even if the circulation is over two million. H. M. H.

FROM OTHER JOURNALS

Narcotic Legislation

No one is more anxious to prevent narcotic addiction than the physician, and the profession as a whole is only too willing to coöperate with the government regulations necessary to limit the use of habit-forming drugs to proper channels.

Various estimates have placed the number of narcotic addicts in the country at figures ranging from 15,000 to five million. The very nature of drug addiction makes accurate determination of the number of addicts impossible. Even though the low estimate is right, every effort should be made to cut it down.

As a result of a seeming increase in the number of addicts in the country the Harrison Act was passed in 1914. Various amendments have been added from time to time, and the Porter bills now before Congress have attracted attention to narcotic legislation.

The Harrison Act was supposed to direct the use of narcotics to legitimate channels. What it really was in the main to direct their use *in* legitimate channels. This was so evident that the public gained the impression that the law was directed against the medical profession. By inference at least the medical profession was blamed for a large part of the abuse of a most valuable drug. The fact remains that financial gain on the part of those selling narcotics illegally to addicts is the main cause for the spread of addiction. The percentage of addicts made so by careless physicians must be very small. The few unprincipled physicians who profit by aiding addiction can not be too severely condemned and should be punished to the full extent of the law. Enforcement of law should be specially directed against such unprincipled offenders.

Certain provisions of the Harrison law have been needlessly strict and irritating to both physicians and pharmacists—so much so that certain pharmacists have refused to handle narcotics at all and certain physicians have refused to treat addicts for fear of penalties attached to infringement of over-rigid and ambiguous regulations. The physician must keep a record of narcotics administered in the office; must use special requisition blanks for morphine tablets; can not order a prescription containing codein above a certain amount by telephone; must observe certain incomplete regulations in treating an addict in an institution, and so on.

Registration by physicians licensed to administer narcotics is required each year, and an oversight does not relieve the physician of the penalty, which may be $2,000 or imprisonment for five years, or both. As a matter of fact, any one who violates or fails to comply with any provision of the Harrison law is liable to the same penalty.

As though the present law were not stringent enough in regulating physicians, now come the Porter bills, mentioned in the editorial of the A. M. A. *Journal* of February 8, 1930. One of these bills has already been presented to the House, and, if enacted, no physician who has been convicted of any offense against the present narcotic law, no matter how trivial, may ever be licensed to administer a narcotic again. All regulations are to be made by the Commissioner of Prohibition subject to approval of the Secretary of the Treasury. The physician whose rejection of application for a license is impending must show cause why a license should be issued or why his license should not be revoked—in other words, is considered guilty until he proves his innocence. The defendant has no voice in determining the place of hearing, whether it be public or private, and no rights as to who shall be subpœnaed as witness. Only the Commissioner of Prohibition may pass on the evidence submitted. Provision is made for appeal to the courts from decisions rendered by the commissioner.

The second Porter bill provides for the creation of a special Commissioner of Narcotics. As stated in the editorial, this centralized bureau in Washington will have dictatorial right in determining what physicians licensed by the respective states shall be

allowed to administer narcotics. We physicians will have a Mussolini in Washington to dictate whether or not we may prescribe narcotics. Such high-handed legislation merely sets the scene for trouble, and violations of a needlessly strict law will result.

The present and proposed narcotic legislation is missing the point. Instead of giving dictatorial power to a bureau in Washington to regulate physicians, it would be far better to concentrate the energy of the bureau on the illegal peddling of narcotics outside of the profession.

The regulations proposed in these Porter bills border on tyranny, and every physician in the state should do his part in defeating these bills. Write your representative in Washington.—*Minnesota Medicine.*

GENERAL NEWS

Tuberculosis Association Meeting

The ninth annual meeting of the West Virginia Tuberculosis and Health Association will be held in Huntington June 5 and 6 under the auspices of the Huntington Tuberculosis Association, Cabell County Medical Society, and the Chamber of Commerce. All physicians interested in the problem of controlling tuberculosis in West Virginia are invited to attend and participate in the program. Any physician who would like an opportunity to discuss some special topic should write to Dr. Walter E. Vest, chairman of the program committee, in care of the State Association, 910 Quarrier Street, Charleston.

The guest of honor and principal speaker on June 5 will be Dr. Kendall Emerson, managing director of the National Tuberculosis Association, who will give an address relating to the value of the activities that have been promoted through the initiative of organized unofficial effort and the trend of future programs. Dr. Emerson was closely associated with the development of the medical phases of tuberculosis work in Boston for many years, and was president of the Massachusetts Tuberculosis League when he was selected as managing director of the national organization.

Among the physicians who have consented to discuss conditions and facilities in West Virginia for the diagnosis and treatment of tuberculoss are: Dr. George F. Evans, assistant superintendent at Hopemont State Sanatorium; Dr. George F. Grisinger, superintendent of the Rutherford State Sanatorium, and Dr. O. F. Covert, of Moundsville, who has been conducting clinics in a number of counties for the state association. Reports will be made of the work being done by physicians in connection with the present early diagnosis campaign, in which special attention is being given to the diagnosis of the childhood type of tuberculosis through the use of the tuberculin skin test and the x-ray.

Graduate Course in Pediatrics

New York University and the Bellevue Hospital Medical College have presented the outline for their graduate course in pediatrics, to be held from June 2 to June 27, 1930, at the Children's Medical Division of Bellevue Hospital, Twenty-sixth Street and First Avenue, New York. This service has 150 beds, all in cubicles, in seven wards, in a new building with all modern equipment. The out-patient department treats from one to two hundred patients daily. The service has been conducted by the same staff under Columbia University for many years, and a mechanism for teaching has been built up which assures good instruction.

The plan of the course is as follows: Graduates will be kept busy from nine to five o'clock every day except Saturday and Sunday. On these days the wards will be open to those who desire to follow cases seen in the course.

The work begins in the wards at nine o'clock. Graduates will be assigned to a ward in small groups. Selected cases of interest will be pointed out by the staff for examination and study. Each graduate should be able to go over several patients.

At ten-thirty the visiting staff will arrive for rounds. The cases previously examined will be discussed with the small group, and other cases in the ward will be shown, examined and discussed. The graduate will be in a different ward each day of the week, so that new material will be available daily.

From eleven-thirty to one o'clock a lecture, clinic or conference will be given to all the members of the course. The subjects will be covered simply but thoroughly, stressing the important aspects, especially those not adequately treated in textbooks. Outlines of lectures will be given out in many cases. These exercises will all be informal and ample opportunity for questions and discussions will be given.

In the afternoon the graduates will work on ambulant cases in the out-patient department. They will take histories and examine and treat patients under the advice of the instructors. Once a week the afternoon will be spent in an out-patient clinic conference. Certain afternoons will be in the surg-

ical wards on the diagnosis and treatment of surgical conditions in children. At four o'clock another clinic conference will be held.

This course will not be given unless at least twelve men register by May 10, 1930. The number will be limited so that each member will receive individual attention. Fourth-year medical students who have had adequate third-year instruction may be admitted.

If the demand is great enough, the course may be repeated in July. Those desiring to take the course should register as early as possible with the secretary. The fee is $150. Checks should be made payable to New York University and mailed by May 20, 1930, to the University and Bellevue Medical College, 338 E. 26th Street, New York, N. Y.

Health Examination Campaign

A twenty-five per cent increase in the demands for health examinations since October 15, 1929, when the Five County Medical Societies of Greater New York launched the periodic health examination campaign, has been reported by the physicians of Greater New York.

This fact, together with a number of other significant responses, came to light as the result of a questionnaire sent to a representative cross-section of the city's physicians by the Greater New York Committee on Health Examination, in an effort to ascertain the effect of the recently completed health examination campaign of the Five County Medical Societies.

The questionnaire, together with a day-by-day chronology of the events of the campaign, an exhibit of the posters, leaflets and other data used by the committee, and a statistical report of the radio, moving-picture and press support, are only some of the many features appearing in a book just published by the Greater New York Committee on Health Examination.

This book has been published to acquaint medical societies and other interested parties all over the United States and Europe with the procedure of the New York campaign, whose local success may perhaps serve as a guide for other contemplated campaigns. More than two hundred inquiries regarding the plan and method of the local health campaign were received from thirty states, as well as from Canada, France, Italy, and other foreign countries. To give all interested parties the benefit of its experience, the committee is distributing 15,000 books to medical societies, to health foundations, to welfare organizations, and to educational groups throughout the United States and Europe.

Other results of the questionnaire to doctors indicate a 38% increase in the number of inquiries from patients on the subject of health examinations; a 78% favorable response on the value of the recently completed campaign, and an 85% response for the continuation of the work of the campaign.

Anayodin Not Acceptable

The Council on Pharmacy and Chemistry reports that Anayodin was presented by the Ernst Bischoff Co., Inc., with the statement that it was composed of iodoxyquinolin-sulphonic acid with the addition of 22 per cent sodium bicarbonate, and that from the information before the council it appeared that Anayodin was a mixture prepared from approximately four parts of 7-iodo-8-hydroxyquinolin-5-sulphonic acid and one part of sodium bicarbonate, which during recent years has been used in the treatment of amœbic dysentery while similar preparations under various trade names had, before this, been proposed as wound antiseptics. The council informed the Ernst Bischoff Co., Inc., that, since it was not the discoverer of the preparation, the council could not recognize a proprietary name for it; but, unless other conflicts appeared, its product would be accepted if marketed as chiniofon, which name the council had adopted for the mixture represented by Anayodin, if acceptable tests were provided to insure its purity and uniformity and the advertising revised to meet stated objections. Ernst Bischoff Co., Inc., did not make its preparation acceptable, and, accordingly, the council declared Anayodin unacceptable for New and Non-Official Remedies because it is an unoriginal preparation, marketed under a non-informing name without an adequate statement of composition; because no evidence was available to show that its identity and uniformity are adequately controlled, and because it is marketed with therapeutic claims which are unwarranted. *Journal A. M. A.*, October 5, 1929, p. 1065.)

The Committee on Foods

The need of some body to express judgment of food products and food advertising, in the same way that the Council on Pharmacy and Chemistry considers medical preparations, has become apparent. The council has therefore created a special committee on foods. Manufacturers of food products, distributors, and all others interested in the promotion of good health, will be asked to submit to the

committee the products and the advertising material used in advancing their sale. If a product is found acceptable by the committee, advertisements of it will be permitted in the publications of the American Medical Association, the product will be listed in the book on foods similar to New and Non-Official Remedies, and the manufacturers will be permitted to use a symbol indicating that the product has been accepted by the committee for listing in the book of foods. If the product can not reach the standards set forth, a report will be published as is done for drug products, and advertising of the preparation will not be permitted in the publication of the American Medical Association. The work of the Committee on Foods should do much to carry still further the message of good hygiene and of scientific medicine. In beginning this work, the Council on Pharmacy and Chemistry again asks the complete support of the medical profession. Only by the sincere coöperation of the medical profession with the committee can it achieve the prestige necessary to complete attainment of its objects. (*Journal A. M. A.*, October 12, 1929, p. 1147.)

Truth About Medicines

Typho-Bacterin Mixed (Triple Vaccine TAB).—This product is also marketed in packages of thirty 1-c.c. vials, being ten immunications of three doses each. H. K. Mulford Company, Philadelphia.

Ampoules Sodium Cacodylate-Mulford, 3 grains, 1 c.c.—Each ampoule contains sodium cacodylate 0.2 gm. (3 grains) in 1 c.c. of sterile solution, with 1 per cent of benzyl alcohol. H. K. Mulford Company, Philadelphia.

Ampoules Sodium Cacodylate-Mulford, 5 grains, 1 c.c.—Each ampoule contains sodium cacodylate 0.32 gm. (5 grains) in 1 c.c. of sterile solution, with 1 per cent of benzyl alcohol. H. K. Mulford Company, Philadelphia.

Erysipelas Streptococcus Antitoxin (Concentrated)-Mulford.—This product is also marketed in packages of one 10-c.c. syringe containing 500,000 protective units. H. K. Mulford Company, Philadelphia.

Curdolac Casein-Bran Improved Flour.—A flour prepared from casein, carbohydrate-free bran, and soya bean, to which leavening and flavoring have been added. It may be used for the preparation of muffins or bread having a comparatively low carbohydrate content and low food value, with bulk. Curdolac Food Company, Waukesha, Wis.

Curdolac Soya-Bran Flour.—A flour prepared from soya bean and starch-free bran with a leavening mixture. It may be used for the preparation of bread and muffins for use in diets in which a comparatively low carbohydrate content is desired. Curdolac Food Company, Waukesha, Wis.

Curdolac Breakfast Cereal.—A medicinal food prepared from soya beans blended with wheat products, including starch-free bran. It may be used as a hot food in diets in which a comparatively low carbohydrate content is desired. Curdolac Food Company, Waukesha, Wis.

Curdolac Casein Compound.—A flour prepared from casein, vegetable fiber, and a leavening mixture, to which sodium chloride and gluside are added. It may be used for the preparation of carbohydrate-free bread, muffins, cake, etc., for use in diets in which a relatively low carbohydrate content is desired. Curdolac Food Company, Waukesha, Wis.

Curdolac Soya Flour.—A flour prepared from the soya beans. It may be used for the preparation of foods in diets in which a relatively low carbohydrate content is desired. Curdolac Food Company, Waukesha, Wis.

Curdolac Wheat-Soya Flour.—A flour prepared from soya beans, starch-free bran, and a small proportion of wheat, with leavening and flavoring. It may be used for the preparation of muffins, cakes, waffles, etc., of well-balanced food value for use in restricted diets. Curdolac Food Company, Waukesha, Wis.

Curdolac Soya-Cereal Johnny Cake Flour.—A flour prepared from soya beans and cereal products to which leavening and flavoring have been added. It may be used in the preparation of muffins, cakes, waffles, etc., for use in diets relatively low in carbohydrate, designed for those who can not use products made with bran. Curdolac Food Company, Waukesha, Wis.

Curdolac Soya-Bran Breakfast Food.—A medicinal food prepared from soya beans and a starch-free bran, to which has been added leavening, flavoring, gluside, and oils without food value. It may be used in diets in which a low carbohydrate content is desired. Curdolac Food Company, Waukesha, Wis.

Cascara-Agar Not Acceptable

The Council on Pharmacy and Chemistry reports that, under the name "Cascara-Agar," the Reinschild Chemical Company markets a preparation

stated to contain "15 per cent of a watery percolation of two-year-old cascara bark, which is processed into No. 1 agar, cut to size," and is recommended for use in constipation. It is stated on the trade package that the preparation is: "A harmless vegetable addition to breakfast food. Each teaspoonful contains a mild and specially prepared solution of cascara tea." Since no statement as to the amount of cascara contained in the product was given, the firm was asked to make a plain statement of the constituents of the product. The firm replied, giving the method of preparation of the product. However, since no details were given as to the method used to "debitter" the cascara, one can not say how much of the active principle of cascara was lost in the process of preparation, and therefore the amount of cascara in a given quantity of the finished product can not be judged. Experiments carried out lead to the conclusion that "Cascara-Agar" contains at most only a trace of cascara, and that it is misleading to call the preparation "Cascara-Agar." Information was received that the Reinschild Chemical Company still markets "Regulin," a product which has been stated to be prepared in the same manner as is "Cascara-Agar." Since the Council does not accept an article under one name if an essentially similar product is marketed by the same firm under another name, this markes "Cascara-Agar" further objectionable. The Council declared "Cascara-Agar" unacceptable because it is an indefinite mixture marketed under a misleading name with unwarranted therapeutic claims, and because an essentially similar product is marketed by the same firm under another name. (*Journal A. M. A.*, October 26, 1929.)

Medical Sound Movies

The day when every lecture on modern surgery can be supplemented by demonstrations in sight and sound of actual operations by eminent specialists, when the surgeon performing an operation can demonstrate and explain his technique to a hundred or a thousand medical students any time and at any place, and when the library of every medical institution in the country will include "talking textbooks" that will be available constantly for visible and audible reference, has been definitely advanced by the latest electrical and mechanical development in the reproduction of talking motion pictures, according to J. W. Rafferty, manager of the Industrial and Educational Department of RCA Photophone, Inc. The company represents the achievements in this field of the Radio Corporation of America, the General Electric Company, and the Westinghouse Electric and Manufacturing Company. A survey of the medical field by RCA Photophone in connection with the introduction of the first portable RCA Photophone talking picture projector reveals that many plans of great medical value are under consideration by scientific and medical institutions throughout the country.

"Originally conceived as an entertainment medium, the talking picture has now been brought to the service of medicine and science by the development of the portable photophone," Mr. Rafferty declared in the company's report. "It can now serve the specialized needs of the medical school or the institution for scientific research more efficiently and more effectively than a whole army of instructors and lecturers.

"Motion pictures have been used as aids to medical instruction in various parts of the world for the past decade. One hospital, the Serafimerlasarettet, in Stockholm, has used school films for medical pedagogics for fifteen years. But with the advent of the talking picture, the applications of the talking screen to medical and scientific advancement are increased a hundredfold. The medical field has been awaiting the development of portable motion-picture sound projectors, ready to plug into the electric-light socket and to be wheeled from room to room as required. This equipment has now been perfected.

"Plans ranging from the talking motion picture as a teaching film to be used in conjunction with lecture courses to be delivered by medical school staffs, to 'animated textbooks' that would provide entirely new approaches to many medical problems, are now under discussion by leading medical authorities. The extraordinary facility with which the talking film lends itself to medical instruction can best be appreciated when it is understood that fifty students watching a surgeon can see little more than their eyes and the position of their seats permit them to see. On the film, close-ups can carry the spectator to the heart of the operation. But, greater than that, the talking film gives the spectator a running lecture, outlining in detail the elements of the surgery. Any form of instruction or demonstration can be duplicated a thousand times in a thousand places simultaneously by use of this portable reproducing system.

"An excellent illustration of the value of the talking picture to medical education was given by Dr. S. H. Goodhardt, Columbia University professor,

whose first talking-film lecture was recently exhibited at the New York Academy of Medicine. He cited an instance not long ago when he had to make a trip to Panama to appear before a medical group. Had the portable sound projector been available at that time, he said, he could have saved much valuable time and avoided absence from his duties in New York by sending a portable machine and a print of the film to make his Panama 'appearance' for him."

High Authority on Mistakes

It is said that Dr. Maurice H. Richardson, of Boston, had a habit of publishing an account of his mistakes every four years. We have seen a few articles of this kind here and there—too few, we think — and we commend the practice to the thoughtful attention of our readers as a life-saving measure.

Several months ago our attention was attracted to an address delivered on the opening of St. George's Hospital Medical School, London, published in *The Lancet* for October 5, 1929, the title being "Doctor and Patient: Founded on 33 Years of Mistakes"; the author, Dr. Edmund I. Spriggs.

As might readily be supposed, considerable of the content is made up of wise observations based on broad experience. Some of this we shall pass on to you.

The relation between doctor and patient is considered much after the fashion we commonly employ in studying a disease, beginning with history and proceeding to etiology, pathology, method, complications, prognosis, and treatment. "If you are chosen" [as a medical attendant], says Dr. Spriggs, under *Etiology*, "because your patient's dinner or dancing partner told her that you were absolutely the only man for the nerves, or the gapes, or whatever it is—beware. It is positively a danger to have emotional persons going about saying Dr. So-and-So is wonderful."

If the case is a new one, it is advised that other doctors who have seen the patient be communicated with, for "doctors are colleagues, not merely rivals, and the solidarity of our profession is not only right for us, but especially good for our patients." Independent opinions are sometimes "just unconnected guesses." It is particularly pleasing to find that this class of students entering on the study of medicine in an old and famous college were told that the family doctor is the unit of all medical work, that "He should control the case, using specialists and institutions as need arises. His is the responsibility. Patients who do not keep to their doctor run a considerable risk, because no one else can hold all the threads."

Caution is urged against assuming that all the symptoms are explainable by one finding; also against being too ready to change a diagnosis once it is arrived at. The doctor says he has several times been wrong in taking a diagnosis back. Warning is sounded against expecting an exact relationship between success attained in any given case and gratitude for the result; and, in illustration, a case is cited of a patient who bade farewell with " 'Doctor, I can never thank you enough. When I came here I was done, and I knew it. Now I am well again.' His eyes filled with tears, he shook me by the hand, and, looking through the open windows, added, 'I believe it's the air'!"

The admirable address concludes with the advice to keep an open mind for the reception of new knowledge, to regard nothing as stamped with the impress of finality, and to keep it in mind that any careful, diligent, observant doctor can make valuable contributions to the sum of knowledge of disease and its management.—*Southern Medicine and Surgery*

Mental Hygiene and the Internist

When one considers that twenty-five per cent, and possibly more, of the internist's patients are neurotics and psychoneurotics *per se*, or that neuropsychiatric symptoms are the prevailing symptoms met within such a percentage, one should be forcibly struck with the very close relationship of internal medicine to mental hygiene.

Many internists are cognizant of the mental picture presented by the mental patient, *per se*, in contrast to those of the neurotic and psychoneurotic, as well as those psychoneurotic manifestations which are associated conditions of the physical disease from which the patient suffers. Cases seen by the internist usually fall into: (*a*) arrested developments; (*b*) frank psychoses without physical diseases; (*c*) psychosis dependent on physical diseases; and (*d*) neurotic and psychoneurotics either as an entity or as a part of the physical picture. The internist may also be the first to come in contact with problem children.

The method of approach most acceptable is for the internist to study his patient, regardless of the mental picture, for the presence or absence of neurologic, physical, chemical, and pathologic findings; for foci of infection; glandular disturbances or dis-

eases of accessory sinuses. Positive factors, regardless of how trivial, bear a dependable relationship to the patient's psychic reactions and should never be lost sight of in handling the case. Along with the program of physical and mental regimen in these cases should also be included a mental health regimen.

In those patients in whom no physical factors are found, it behooves the physician to search the etiologic field further as to possible heredity and environmental factors, personality, conflicts, etc. In the event the internist finds such endeavor too time-consuming, it is his duty to the patient to refer him to a psychiatrist or to a mental clinic. We should all guard against telling the patient: "You are only nervous. I can do nothing further for you," thus starting him on his endless journey from doctor to doctor, without relief.

The internist will lend a great impetus to mental hygiene if he will remember that a patient's mental condition in any illness is as much at stake as his physical health and should not be lost sight of in his regimen of treatment.—*Pennsylvania Medical Journal.*

Antivivisection

The antivivisectionists may emit howls that are long and loud and lusty over vivisection for the sake of medical progress, but it is to be noted that they are singularly quiet when it comes to vivisection for social convenience.

In fact, the name of more than one strong antivivisectionist might be found among the committees and boards advocating sterilization of many classes of humans. Neither do they seem at all perturbed about the great number of castrations among domestic animals, which might be placed conservatively at 100,000,000 cases. Anesthetics are not used in these cases, not even for the poor little bitches. But who hears protest from the antivivs on that? And where, oh, where is the S. P. C. A. on that topic? Nearly all of the operators in the bulk of these 100,000,000 cases know little of anatomy and far less of sepsis, and even less of technique. Even under the best of circumstances this operation is of the classification denoted as "major," and there is plenty of attendant suffering, and suffering that is quite unnecessary. It has been well said that not pain but progress is the target at which the antivivisectionists aim. Nor do they seem to be concerned about the frightful suffering and many preventable deaths among domestic animals caused by filth, cold, exposure, etc., in shipment and slaughtering of animals, and the suffering and deaths caused by fishermen, game and bird shooters, and dealers.

The antivivisectionists let the wholesale crimes against animals flourish; but with maudlin sentimentality they raise Cain over the comparatively small proportion of animal experiments conducted by scientists that result in benefits to animals as well as to the human race.—*Illinois Medical Journal.*

Ginger Paralysis

During the past few weeks considerable discussion has arisen among the physicians of Mississippi, and, to a lesser degree, among the Louisiana profession, where the disease has not occurred in such large numbers as in the sister state, as to the etiologic agent responsible for a peculiar type of paralysis endemic in certain communities. This particular disorder is characterized by the following salient features: It is relatively rapid in onset, weakness of the lower leg appearing one day and then, day by day, extending centrally; it is associated with pain, at times quite severe; the pain is not referred and not definitely related to nerve distribution; tenderness is present over the affected area; the weakness of the lower limbs is bilateral and symmetrical; it is progressive, so that at the height of its course walking is extremely difficult; there is a well-marked foot-drop with loss of Achilles tendon reflex; the patellar reflexes are diminished, but there are no alterations in the other deep reflexes, including those of the bladder and rectum; Romberg is positive, but Babinski and other pyramidal tract reflexes are unaffected. The upper extremities only rarely are attacked, and then but slightly. There is no evidence of a constitutional reaction at the onset, although in the one instance in which a leucocyte count was made the cells totaled 16,000. Lastly—and this observation is most intriguing—almost all patients give a history of having drunk Jamaica ginger to excess. As a result of this usually recited tale, the newspapers of the country particularly, and the medical profession to a lesser degree, have become greatly agitated about the possibility of the ginger in the extract causing the neuritis. Unfortunately for this hypothesis, the disease has occurred in children and in one physician who has never touched ginger in his life and does not use alcohol, another possible etiologic agent.

Epidemiologically, the disease would seem to be an infection, as it has spread from place to place. From this point of view, and from the positive, definite absence of any history of drinking ginger

or alcohol in several instances, it would seem that ginger can not be incriminated as the etiologic agent; rather, it is very much more likely that some vague infectious agent is responsible for the disease, producing an infection which may be allied to, or even be, poliomyelitis. The imbibation of ginger may be a coincidence, or its alcoholic content may produce such general immunologic changes as to favor the propagation and growth of the organism in the individual.

The large number of cases reported in several states would indicate prompt investigation procedures by the United States Public Health Service.—*New Orleans Medical and Surgical Journal.*

Sane Medical Testimony on Insanity

A new approach to the solution of a grave problem was illustrated for the first time in Missouri by the action of the court, the prosecuting attorney, and the attorney for the defense in the Schumm murder case at St. Louis, March 17. By unanimous agreement these officers selected three physicians trained in the study of mental disease to examine Schumm and report their conclusion on his mental condition to the court. All agreed to accept the conclusion of the commission. The physicians they selected were: Dr. M. A. Bliss, Dr. Sidney I. Schwab, and Dr. Francis M. Barnes, Jr.

Sufficient time was allowed for the commission to make a thorough study of the defendant under hospital conditions. Interviews with teachers schoolmates, companions, and relatives were held and a certified family history record was obtained. Calmly and with no emotional stress the commission arrived at the conclusion that Schumm was insane.

The findings of the commission were accepted by all parties to the trial, the jury was selected in a few moments instead of this process consuming many days, as is usual under the conventional procedure, and the verdict was rendered within half an hour after the jury had received its instructions from the court. The verdict declared that Schumm was insane and ordered him to be confined for the remainder of his life. Thus was concluded, in an orderly, dispassionate and scientific manner, the trial of an unfortunate victim of paranoia who shot and killed his father and seriously injured his mother without provocation or forewarning.

The case held all the elements tending to provoke a bitter "battle of experts," if the trial had been conducted in the customary manner. That we have been spared the sensational and utterly fruitless spectacle so characteristic of the conventional method in similar cases in the past is due to the enlightened attitude of the court and the attorneys, Judge Harry A. Hamilton, of the criminal division of the circuit court; Mr. Tom Hemmings, assistant circuit attorney, and Mr. Guy A. Thompson, attorney for the defense. To these gentlemen must be given the credit for having initiated a reform in the conduct of murder trials where insanity is a plea that we hope will soon cease to be a discretionary power but become an obligatory procedure through legislative enactment. Mr. Thompson has long advocated the adoption of a statute creating a commission in the state eleemosynary board to do exactly what these St. Louis physicians did in the Schumm case. Instead, however, of permitting courts and attorneys to exercise their discretion in the matter, the law should make it obligatory upon them to submit the defendant to the commission immediately upon the plea of insanity being entered.

Although, in this particular case, the acts were committed under such circumstances as to make mental disorder presumptive, a similar procedure as to full determination could well be followed in all murder cases where insanity is an issue. When such examinations are made by wholly disinterested examiners, as they are under the Briggs law in Massachusetts, the scandal of expert medical testimony practically disappears. Emotional display has no proper place in the weighing of findings in these instances. In Massachusetts it is a routine. Examinations by the personnel of the state department for mental disease is conducted in an orderly way, uninfluenced by the press, the legal profession, or the people.

For many years the Missouri State Medical Association has endeavored to find a solution of this intricate problem—intricate when left to individual or organizational effort, but simple when controlled by statutory provision. No rule of conduct nor ethical principle can be formulated to deter physicians from offering what is apparently biased testimony in such cases, nor would it be wise to attempt doing so. Without any such regulation in our Association, many physicians have steadfastly declined to qualify as experts in all such cases, and those who make a practice of finding the mental condition wanted by the side which summoned them soon discover that they have lost the confidence of their fellows and built up a malodorous reputation in the legal profession.—*Missouri Medical Journal.*

Corozone

To the Editor. I have been canvassed to buy a device called Corozone, which is advertised in the *Saturday Evening Post*. The device appears to be an ozone generator, and I think the claims for it are exceedingly extravagant. Would ozone combine in any way with carbon dioxide to make it suitable for reinhalation? Is ozone, if breathed or taken into the lungs, capable of combining with the carbon to form carbon dioxide and serve the same purpose as atmospheric air? Has it any especial value as a purifier of atmospheric air? Would ozone in sufficient concentration to be germicidal be suitable for ordinary breathing? Please omit name.

M.D., Ridgway, Pa.

ANSWER.—The Corozone unit referred to is a small portable ozonator which can be operated on the ordinary electric-light circuit.

Ozone does not combine with carbon dioxide and could not make it suitable for reinhalation. Ozone is an unstable substance and it is doubtful whether any oxygen in the form of ozone would actually reach the blood. Ozone in large quantities has an irritating effect on the mucous membranes, but in small amounts, such as have been found necessary to use in attempting to purify air, probably has no physiologic action; but individuals appear to vary considerably in their reaction to this substance. How much of this reaction is physiologic and how much is psychic it is difficult to determine. Ozone in sufficient concentration to kill bacteria is not suitable for ordinary respiration because of its irritant action.

Ozone can not be used as a substitute for good ventilation in a room any more than deodorants or perfumes can be used as a substitute for bathing the body. Certain odors appear to be destroyed when ozonated air is produced in their presence, but this is probably due to the fact that the gas covers up the other odors.

As stated in a Query and Minor Note on "Ozone and Ventilation" (*The Journal*, June 29, 1929, p. 2186), there has been no sound scientific work brought forward to show that there is any place whatever for ozone in problems of ventilation; on the contrary, E. O. Jordan and A. J. Carlson reported that the available evidence demonstrated the lack of hygienic value of ozone in room ventilation. Their experiments show that ozone has no place as a practical room disinfectant, because it is not bactericidal in concentrations which can be borne by man; that in concentrations which can obtain in practical ventilation ozone is not a deodorizer and the masking of odors which it may effect is undesirable; that the inhalation of even small amounts of ozone is harmful, and that as a therapeutic agent the gas is valueless if not injurious. (*The Journal*, Sept. 27, 1913, p. 1007.)

WOMAN'S AUXILIARY

The State Meeting

Although the completed program for the annual meeting of the Woman's Auxiliary to the West Virginia State Medical Association has not yet been announced, it is understood that a number of good speakers have been provided and that an excellent program will be presented for those in attendance. Arrangements for the various meetings of the Auxiliary have already been made with the management of the Greenbrier Hotel at White Sulphur Springs.

There will be two lectures presented to the state association that will be open to Auxiliary members. The first is an address by Dr. M. Y. Dabney, of Birmingham, Alabama, which will be delivered on Tuesday evening, May 20; and the second will be the banquet address by Dr. R. F. Lischer, of Mascoutah, Illinois, on the subject, "A Pen Picture of the Country Doctor."

Mrs. J. P. Lilly, of Morgantown, Auxiliary president, has announced that the program at White Sulphur Springs will be much shorter than it has ever been before. It is the plan of the program committee to hold fewer meetings and shorter meetings than have been customary in the past, allowing more time and freedom to the members in attendance at the meeting. Mrs. Lilly is of the opinion that, in the past, Auxiliary programs have been too strenuous, and she feels that the Auxiliary members will get more out of the meeting if they are given less material to digest.

Considerable interest has been manifested throughout the state in the coming White Sulphur Springs meeting of the Auxiliary, and the 1930 gathering is expected to be one of the largest and best in the history of the organization.

Kanawha County

The regular monthly meeting of the Woman's Auxiliary to the Kanawha Medical Society was held on the afternoon of March 18 at the home of Mrs. W. T. Henshaw, Armor Park, South Charleston. Approximately thirty members were present. Following a short business session, Mr. Joe W. Savage, secretary of the West Virginia State Medical Association, gave a talk on the subject, "Nostrums and Quackery." Mrs. T. M. Barber, of Charleston, also gave an interesting review of the current number of *Hygeia*.

MONTHLY MORBIDITY REPORT

BY COUNTIES

MARCH, 1930	Chickenpox	Diphtheria	German Measles	Hookworm Disease	Influenza	Measles	Meningitis, Cer. Spi.	Scarlet Fever	Smallpox	Tuberculosis, All Forms	Typhoid Fever	Whooping Cough
Berkeley								1		2		
Boone	1	1			14			1			10	1
Braxton		1	1		2			1				12
Brooke	1	4				2		7		1		
Cabell	1	6				53		5	17			1
Calhoun	1								3			
Doddridge					31							4
Fayette		6				6		13		1	4	
Gilmer					1			2				
Grant								2				8
Greenbrier	1	1						1			2	
Hampshire								4		1		
Hancock	1	4					1	35				
Hardy								1			1	
Harrison	61	1				7		12				65
Jefferson	7											
Kanawha	82	4		7	21	71		7		13	65	76
Lewis	1	2						5				
Lincoln						26			27			13
Logan	1	5				182		1	20		4	
McDowell	10	4	1			22	2	1	25	1		
Marion	3	1				7	1	31		4	3	
Marshall	3					9		2				4
Mason		4			18				4			3
Mercer	1	2			2			1			1	8
Mineral	73	6			47	14		11		10		44
Mingo		8				9			6			3
Monongalia	12	1						3				1
Morgan	7		1									
Nicholas	3	2	2	2					6			
Ohio	28					2	2	5		10		25
Pleasants								1				
Preston								1				3
Putnam	6							1				
Raleigh	27	3				19		1		1		
Ritchie	11											
Tyler					15	2						9
Upshur					3							4
Wayne									14			
Webster												4
Tucker											2	
Wirt	13	2			10						2	
Wood	6	7			2	1		24	15	6		2
TOTALS	361	75	5	9	166	490	6	180	137	50	94	283

The West Virginia Medical Journal

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JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - Huntington

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PRESIDENT'S ANNUAL ADDRESS

DOLLARS AND DISEASE *

By WALTER E. VEST, A.B., M.D., F.A.C.P.
Huntington, W. Va.

Within the last few years, a great hue and cry has been raised in this country and in Canada about the cost of medical care, usually with the descriptive adjective "high" immediately preceding the word "cost." The discussion was general in the better class of lay periodicals before the medical press took up the subject, a partial survey of the former for the years 1927–29, inclusive, showing forty-one articles in twenty magazines. The *Index Medicus* does not list a single title bearing on the subject during 1927. The succeeding year, however, five are noted, and we were able to find one article not listed there. For the first nine months of 1929 the *Index* lists twenty-one titles, one of which appeared in the lay press. Thus the debate *pro* and *con* waxes warm, often with the medical profession assuming the defensive. Several of the lay writings are pure satire, apparently representing a grouch of the author toward some particular doctor or hospital, "Mammon, M.D." being a very outstanding example. On the other hand, some of the clearest and most enlightening discussions are in lay magazines, notably "Are Hospital Costs Too High?" by Cleon C. Mason in the *North American Review*, July, 1929.

Before attempting to solve any problem, one should first consider whether such a problem be real or only apparent, and, if real, all its possible phases. That there is much illness and that it entails a heavy burden, both physical and financial, is only too obvious. How prevalent is disease? How often are people sick? How much time is lost because of illness? How many people suffer from physical and mental defects? How much money is spent in the effort to prevent or alleviate disease? How is this money spent? Is medical care adequate? Does it cost more than it is actually worth? Do doctors and hospitals profiteer? These and other questions immediately present themselves.

Several studies on the incidence of morbidity, made at various places and under widely different conditions, have been collaborated by the Committee on the Cost of Medical Care, and the conclusion is reached that people generally are disabled by illness on an average at least once a year. There is a sex variation, disease being more prevalent among females. Men have a disabling illness once a year, but women range between once and twice. Children in school average twice per scholastic year. It is probable, also, that income bears a definite relationship to disease—the higher the income the less the susceptibility to disabling illness. The Hagerstown survey, extending over twenty-eight months, showed an annual morbidity rate of 1,080 illnesses per 1,000 population, eighty per cent of which were for three days or longer and only five per cent of which were

* The President's Annual Address presented before the Sixty-third Annual Meeting of the West Virginia State Medical Association, at White Sulphur Springs, West Virginia, on May 20, 1930.

under two days in duration. Very young and very old persons are sick much oftener than are adolescents and those in earlier adult life. There is a definite seasonal variation in the volume of illness, the curve running low in the warm months and reaching the peak in February. Respiratory diseases show a much more sensitive response to this seasonal influence than do other illnesses. On the basis of the lowest rate of any of the studies considered, there must be about 130,000,000 disabling illnesses in this country every year. Similar investigations show that adult males, on account of illness, lose from work between seven and eight days per year, and females range from eight to twelve days. In the Hagerstown survey the school children suffered an average loss of seven days per school year, although this figure is somewhat lower than similar investigations elsewhere show. The Metropolitan Life Insurance Company, in a study of 570,000 people in industrial communities, found that approximately two per cent were ill on an average every day. Everything considered, the 36,000,000 wage earners of America lose at least 250,000,000 work days yearly, and the 24,000,000 school children lose 168,000,000 school days on account of illness—and these two groups include only half the total population. Reliable estimates indicate that there are about 700,000 cases of active tuberculosis in America at all times; about 110,000 drug addicts; 1,000,000 diabetics; over 1,000,000 cases of malaria each year, and more than 350,000 patients in nervous and mental hospitals now. This latter class has increased 102,202 in six years—a ratio which, if maintained, means that by 1935 we shall have half a million inmates of neuropsychiatric institutions, and the National Committee for Mental Hygiene estimates that of the pupils now attending school and college about 960,000 (four per cent) will enter a hospital for mental diseases at some time in their lives—possibly a penalty we are paying for our high-tension modern life. In 1929 there were 11,961,886 admissions to hospitals in this country—about ten per cent of the total population. Last year the average daily hospital population of the United States was 726,766, and this did not take into account the 621,896 babies born in hospitals during that time. In other words, excluding the newborn, six out of every thousand of our population are hospital inmates all the time. In 1928 there were reported more than 38,000 cases of smallpox, probably the most easily prevented of all diseases. The average annual death rate of any given community runs slightly more than one per cent (1.18%) of its total population. Certainly, then, there is a problem of medical care—and a huge problem at that.

We next come to a consideration of the financial cost of this staggering total of illness. The Metropolitan Life Insurance Company made a very exhaustive study of the subject among their industrial policyholders for the first six months of 1929. This survey covered 3,281 families, embracing 17,129 individuals, and took into account all phases of medical care, including doctors' and dentists' fees, nursing, oculists' bills, hospital charges, dispensary fees, medicines, and extra household expenses on account of the illness. The distribution of expenditure was very unequal. Six per cent of the families had no expenditure whatever attributable to illness, and one third of them spent only one-twentieth of the entire outlay. Sixty per cent of the group spent less than fifty dollars per family, while at the other end of the scale one per cent spent more than ten times as much. Twenty per cent of the families bore sixty four per cent of the entire cost. The total expenditure was $230,907, an average of $70.68 per family and $13.48 per capita. Based on this study, it seems probable that the average annual total medical cost approximates $141 per family or $27 per individual, corresponding fairly closely to Biggar's estimate of $150 per family of five for the Dominion of Canada. Other surveys show somewhat lower figures, one being only a trifle above $60 per family per annum. An average of those which would seem to be the most comprehensive and reliable estimates gives a trifle over $90 per family as the annual cost. The Census Bureau estimates that there are, in round figures, 27,000,000 families in the United States. We may conclude, then, that the average annual cost of medical care in this country reaches the stupendous sum of $2,430,000,000, or about one-seventh the amount of our present national debt. Lewis I. Dublin, statistician for the Metropolitan Life Insurance Company, in "What Price Doctors?" (*Harper's*, November, 1927), says that the aggregate cost of sickness in this country is more than two billion dollars annually, or about the same amount as is spent for public education. He estimates it as three and one-half per cent of the country's income. Rankin places the annual total expense at $2,560,000,000, or about $21 per capita. Davis, in a recent article, estimates our annual outlay for prevention and cure of disease at $2,841,000,000, or an average of a little less than $2 per month per person.

What about the distribution of this expenditure, or how is the "medical-care" dollar split? Again we turn to the Metropolitan Life Insurance Company's statistics and find these percentages: Physicians 42.7% and operations 6.9%, or a total for doctors' services of 49.6% of the entire outlay—approximately one-half. This coincides almost exactly with Dublin's estimate in the article above referred to—one-half the total going to professional fees. However, Davis believes that the doctor's share is less than one-fourth the total cost—22.8%, to be exact. Rankin's figures are still lower, amounting to only 17.5%. The second largest item in the Metropolitan survey is for medicines—12.9% of the entire cost; but this includes self-medication, counter prescribing, and the very large item of patent and proprietary medicines, placed by Moore at 50.3% of the total American drug bill. The hospital bill follows closely the drug cost, and accounts for 12.5% of the medical-care dollar. This is considerably less than Dublin's earlier estimate of approximately one fourth, but the latter considers the entire population, while the 1929 survey is for industrial families only. Extra household expenses because of illness amounted to 10.7%; dental service 7.9%; special nurses 3.8%; oculists' bills 2.1%, and dispensary charges, at the bottom, only 0.5%. Stated otherwise, this means that the American family spends annually for doctors' bills $69.58, or $13.32 per person; for hospitals, $16.88; for medicines, $18.04; and for dentists, $11.03. The dental estimate is probably low, as the families upon which the observations were made included only those who, as a usual thing, do not demand sufficient dental care.

In our own state, so largely rural, how do these figures apply? The only studies of the cost of medical care for the farmer that we have been able to locate are a compilation of the replies to a questionnaire sent out by *The Farmer's Wife* to its subscribers and an estimate of the United States Department of Agriculture. The conclusions published by the magazine were that the average total annual cost of sickness to the farmer's family is $104.94, of which the doctor receives $29.35 and the hospital $15.06. Only one family in five sent a member to a hospital per year, and the average bill for this was $70.46. The average of obstetrical fees was $28.33, and of charges for visits to farm homes $7.63 for an average distance traveled one way per visit of 7.03 miles, or approximately one dollar per mile. The Department of Agriculture estimates the annual medical bill of the farmer at $61.60.

Are doctors adequately paid, underpaid or overpaid? Dublin, in "What Price Doctors?" estimates the average *net* income of doctors and dentists at a little over $3,000 a year, and Rankin agrees. Follansbee believes that the average income, presumably gross, although he does not specify, ranges between $5,000 and $6,000 per annum. Davis, basing his opinion upon the Harvard graduate statistics and the income-tax returns of physicians in certain states, considers the average gross income from private medical practice to be about $4,500 annually. The *American Medical Directory* for 1929 lists 152,503 licensed physicians, although the number is constantly changing slightly, and includes about 9,000 who are retired, leaving the number actually engaged at approximately 143,500. Using our figures given above, deduced from the Metropolitan, Census Bureau, and other estimates, the approximate gross collections from professional fees is about $1,215,000,000, or an average of somewhat less than $8,500 per doctor per year. Practically all estimators agree that the average office overhead is one-third of the physician's gross income, and, deducting this, we conclude that the average *net* income is around $5,600 per year. This is certainly not an excessive figure when we consider that the first twenty-eight years of the doctor's life are spent in preparation before he is even income-producing at all, when his fellows in other callings are already established at a like age. Moreover, the cash outlay on his education has been $12,000 which sum at interest would bring him in $72[illegible] annually.

Are surgical fees too high? Statistics are not plentiful on this phase of the question, but the Metropolitan survey we have quoted so often shows an average cost per family of those families requiring operations for the period under observation as slightly less than $75, or an annual cost of a little less than $150, and only one family in fifteen required operations during a six-months' period. When the whole group was considered, the total annual cost of operations was only $9.62 per family, or $1.84 per person. Does this figure seem excessive? Moreover, surgeons are very liberal with free operations when there is a question of ability to pay. As an example, in the statistics of one large city more than half the tonsillectomies were done without professional charge.

Let us consider hospital and nursing costs. McNamara and Parker studied the bills of 10,000 full-pay patients in 100 general hospitals in cities

ranging in population between 25,000 and 1,000,000. These bills were taken *seriatim*, the first one hundred in each hospital for the year 1929. Thirty-five states were represented, West Virginia not among them. No Catholic hospitals were included, because the work of the sisters lowers the average costs in these institutions, and none were considered where any part of the cost of upkeep was met by taxation. The total bed capacity of the hundred hospitals was 18,564, an average of 186. The average hospital residence was 11.04 days, and the average cost was $71.99, or $6.52 per day. Item distribution showed that approximately 70% was for board, floor nursing, and room. Other items varied considerably, operating room and obstetrical room fees ranging from 5% to 15%; board of special nurses from 3% to 8%; laboratory fees from 3% to 5%; x-rays from 1½% to 13%; dressings from 1% to 3%, and drugs from ½% to 5%. It seems, from the way these bills were chosen, that they should mirror fairly accurately the average cost of full-pay hospital service. No physicians' or private-duty nurses' bills were included. How does this charge compare with hotel rates? After all, hospitals are like "Fultah Fisher's boardinghouse, where sailor men reside," only a special type of hotel where sick people are the guests. In the hotel you go out to your meals, pay for them separately, and have no care except that your room is arranged. In the hospital you have your meals served in bed; all your wants are cared for as often as you ring; you pay only one bill, and custom does not demand that you tip the waiter after each meal—and the total cost is about the same. In addition to meals and lodging, you have gotten nursing, medicines, and such laboratory and x-ray service as you need. You take up residence in a hotel long enough to accomplish some definite object. The same is true when the hospital is your hotel, and in this instance your objective is a diagnosis, an operation, or some other form of treatment. In each case you pay for your objective in addition to paying for your residence.

The average hospital patient has a hospitalizing illness but once every three years, and only 12% of disabling illnesses in the urban communities require hospital care. The statistics for 1929 would indicate that the total population of the country has a hospitalizing illness once every ten years. Dublin's estimate of the hospital portion of medical cost in "What Price Doctors?" is approximately 25%; Rankin's is 29.2%, and Davis, who includes capital expense of 9%, puts the percentage at 30. Hospital costs are very unequally distributed, less than one-fifth (19%) of the patients paying more than one-half (52%) of the total outlay. The average daily expense for running the hospitals of the country, including salaries, supplies, fuel, operating charges and incidentals, is about $1,000,000, 91% of which is paid by patients, the remainder being made up from endowments, taxes, and donations. Twenty-two per cent of hospital effort is expended on free work and 31% of the total number of patients admitted are charity.

The average registered nurse has an annual income closely approximating $1,500. She has gone through high school, spent three years in training, works twelve hours out of twenty-four, most often at night, and receives fifty cents per hour for her service to the sick—the same price per hour we pay a negro scrubwoman for washing floors. Is this ministering angel overpaid?

Has the cost of medical care increased? We believe it to be evident that this question must be answered in the affirmative. How much has this increase been? Statistics are very meagre as to professional charges, but apparently the average fee lists would indicate about a 50% elevation since 1913. Hospital statistics are much more exact and show that hospital charges have increased 66% for the same period, while the increase in cost of hospital operation has been 135% and living generally shows a cost increase of 71.4%. In the light of these figures, do doctors and hospitals appear to have gotten more than their due or less?

Has the enormous cost of medical care been worth while? In other words, have the agencies for health betterment justified their existence? What is on the credit side of the ledger?

The first item to attract our attention is the increased span of life and the decreased incidence of preventable illness. The average length of life is now three times that of the sixteenth century; two and a half times that of the seventeenth, and almost twice that of the eighteenth. The commonwealth of Massachusetts has kept accurate vital statistics since 1789. The year Washington was inaugurated, the average Massachusetts life was only 35 years, and the life span increased but eight years in the succeeding century. How does this increase compare with that of recent decades? For the registration area of the United States the 1900 average life was 49 years. By 1910 it had increased two years, and during the next decade, despite the World War and the influenza pandemic, the increase was total

years. For the ten years just closed the increase has been six years—the average death age now being sixty-one. According to Dublin's estimates, a child born in 1930 will have a life expectancy of almost four months more than one born a year previously. This increased life expectancy is almost, if not entirely, due to medical care, under which we group not only the physicians, public health workers, and hospitals, but also dentists, nurses, pharmacists, hospital personnel, medical schools, research foundations, and the better drug-manufacturing firms.

How have the hospitals met the situation? In 1904 they numbered 1,493, with 97,242 beds, 1,439,162 admissions, and an average daily census of 47,972. By 1910 the number had increased to 1,918 hospitals, with a bed capacity of 155,838, admissions of 2,805,114, and an average daily census of 96,390. Last year the hospital survey of the American Medical Association showed 6,665 approved hospitals (and, incidentally, 504 were disapproved for one reason or another), an approved bed capacity of 907,133, admissions of 11,961,886, and a daily average patient personnel, excluding the newborn, of 726,766.

For the past seven years the average bed increase has been 11% annually and the average construction cost has been $300,000,000, although the total number of hospitals is slowly decreasing, the tendency being to consolidation and to improvement of existing plants—a healthy sign, we take it, and in conformity with modern business trends. In our general hospitals the average death rate now ranges between 3% and 3½%, as compared with between 5% and 6% twenty years ago. Moreover, the average stay per patient in general hospitals in 1900 was between 20 and 21 days. By 1912 it had decreased to slightly less than 16 days; by 1926 to 12 days, and now is slightly under 10 days. Stated in other terms, during the last twenty years the hospitals have reduced their death rate and shortened the length of hospital residence per patient more than one-third.

When we consider the question of the eradication of disease, the record is very flattering, indeed. In seventeen years the death rate from typhoid fever dropped from 23.5 to 5.5 per 100,000 population. A quarter of a century ago tuberculosis claimed 200 per 100,000 annually; whereas now the rate is only 86. In the nineteenth century yellow fever was present in the United States seventy-nine consecutive years, and now we have gone more than twenty-four years without a single case. Hookworm has been eradicated and the incidence of malaria greatly lessened. Smallpox, typhoid, diphtheria, and tetanus are entirely preventable. The meningitis death rate has been reduced two-thirds. Infectious diarrhea has been practically eliminated. Insulin and diet have made the diabetic practically master of his own life tenure. Sanitation, the handmaid of medicine, has opened the tropics to the white man and so transformed them that whereas the building of the Panama railroad cost a human life for every crosstie, the same area now has a lower death rate than most American cities. And the list of accomplishments might be extended much further; but suffice it to say that the brightest chapter in the history of human betterment is that of medical accomplishment from Pasteur to the present.

What are the causes of the increase in the cost of medical care? A consideration of this question discloses quite a number of underlying factors, only the major of which will be discussed here. Certainly one of the great causes is the improved standard of living and the consequent increase in living costs. Within the past fifteen years, the increase on all commodities has been 68.4%. According to the statistics of the United States Department of Labor, the items of hospital cost have increased since 1913 as follows: Kitchen help 432%, maids 125%, pharmacists 500%, internes 525%, laundry 400%, chefs 225%, raw foods 58.5%, fuel 80%, dishes 100%, blankets 63%, absorbent cotton 71%, catgut 50%, and instruments 75%. In comparison we would cite the figures already given of approximate increases of 50% in medical fees and 66% in hospital charges to patients.

Probably one of the most potent influences is the tendency on the part of the patient and his friends to demand the best of everything. This, of course, is a part of our American extravagant idea of doing everything on the largest scale possible. Years of hospital experience have taught us that when illness strikes a loved one the average family is bereft entirely of cost perspective and financial discretion. Everything possible must be done; only the best and completest will suffice. Thought of a pending payday comes only with the arrival of the bills.

Another very significant cause, and probably the greatest, is the scientific development of medicine, its increase in complexity, and the marked increase of medical and hospital apparatus. Medical care is getting better all the time; diagnosis is more exac and treatment more complete and effectual than ever before. Medical care not only costs more but

is actually worth more, and the patient gets a better return on his investment than at any time in the past.

The increasing cost of medical education has influenced medical expenditures in several ways besides its direct bearing. Together with the elevation of standards it has lessened the number but improved the quality of medical graduates, a process which has increased the number of non-medical practitioners, healers, "hex" doctors, and what-nots, and these irregulars have a total income variously estimated at from fifty to one hundred and twenty-five million dollars yearly. It has likewise tended to a concentration of doctors in the centers of population with a consequent dearth in the more sparsely populated areas, and has probably increased the tendency to specialization, a phenomenon which in itself has aided in the depletion of the patient's pocketbook.

Free service by doctors and hospitals adds to the burden. About one-sixth of the volume of work done by the average physician is free, either charity or gratuitous, and no charge record of it is made. Of the charge work, a proportion variously estimated at from one-fourth to one-third he is never able to collect. We have already cited the non-pay work of the hospitals, but one item calls for special mention here—the automobile accident. Only 60% of the bills for these patients are ever collected, and in Ohio for 1928 the hospitals lost an average of $2.59 per day's service on these victims.

Poor business methods of doctors and hospitals, especially poor cost records, lack of budgeting, unsatisfactory collections, and injudicious buying contribute somewhat, and the necessity for what might be called twenty-four-hour preparedness for emergencies is to be considered. The vacant hospital bed space, which usually runs around 30%, adds very materially to the total bill, and the fact that in 1929 this increased to 34.5%—the high-water mark since records have been kept—suggests that possibly we are close to the bed saturation point.

The tariff on hospital and medical necessities is by no means the least of the causes, and depreciation on hospital buildings and medical equipment amounts to an enormous sum. Minor elements in the cost picture are the ever-increasing number of malpractice suits, the widespread custom of installment buying, incompetent physicians (and we admit that there are some incompetents in the profession), cost of post-graduate instruction, medical publications, and the multiplicity of medical organizations.

We have thus far considered only the problem and its productive factors. The examination completed, what of the treatment? A dispassionate view of all the evidence leads to the conclusion that there is no specific, but that we must, at least for the present, depend upon symptomatic remedies. We admit that the cost of adequate medical care is high but it is not abnormally so when we consider the standards of present-day living. We pay without murmur as much gasoline tax as our hospitals cost us, and twice as much for cosmetics. Our annual expenditure for candy and tobacco ($3,031,000,000), neither a necessity, would pay our entire national bill for medical care ($2,430,000,000), wipe out the state debt of West Virginia ($74,173,800), complete both the capitol ($5,000,000) and the state road system ($90,000,000), and leave surplus enough to buy outright the cities of Charleston and Huntington. But who whines about the high cost of candy and tobacco?

What are some of the remedies? Will they afford relief? The modern world has grown so rapidly that we have not yet adjusted ourselves from a health standpoint, and are still suffering from "growing pains," so to speak. Part of the remedy, then, is organization and adjustment. Much good can be done by education of the laity as to the magnitude of the problem, its various aspects, and the aims and accomplishments of medicine. This should be done by articles in the lay press, addresses over the radio and before service clubs, in conversation, and by paid advertising, featuring always the aggregate and never naming individuals. With understanding comes tolerance and united effort toward relief. This educational program should include the true worth of medical care and the private practice of preventive medicine, especially inoculations and periodic health examinations; the necessity of fitting hospital and diagnostic service to individual purses; the actual value of wards and cubicles; the necessity of early diagnosis, prompt treatment, strict adherence to medical advice, and the futility (oftentimes the danger) of self-medication and of patent medicines. Stress should be laid on the importance of the payment of doctors' and hospital bills and the absolute necessity for some scheme of compulsory automobile insurance. We must come to closer coöperation among physicians, the use in common of waiting rooms, laboratories, technicians, and costly apparatus, and the training of all hospital and office personnel to spare no effort to satisfy patients and their friends, especially in the

serving of attractive meals. Hospital executives should be specially trained. Better business methods as to budgeting, office management, and collections should be adopted; but this ought never go to the extent of dehumanizing medical care.

Medical education can improve conditions. It can probably never be any less costly and turn out competent physicians, but the summer vacations can be eliminated and the present course given in three calendar years—a plan now being undertaken at one or two schools. Medical economics should have a prominent place in the curriculum; preventive medicine should be emphasized as a matter of private practice and not as a corollary to public health; and I am personally of the opinion that more stress should be laid on therapeutics and the *art* of medicine rather than the modern trend to consider it from a purely *scientific* standpoint—a trend which minimizes the value of the personal elements of history and physical examination and exalts the mechanical features of laboratory and x-ray, both the latter items increasing very materially the total cost. Collegiate courses must be given for hospital executives. Post-graduate medical education could be improved upon; it is certainly a *sine qua non*, so rapidly does medical science develop. Limited licensure might be tried as a means of meeting this need; that is, licensing a physician for a certain number of years, and renewing the license upon presentation of evidence of a stated amount of post-graduate work. We are not ready to champion such a scheme, and believe, if adopted, that attendance upon medical societies should certainly be credited as post-graduate instruction.

The question of limitation of practice is a very vital one. Specialization has become a necessity and the specialist must charge more for his service than the general practitioner; his equipment is usually much more expensive and the number of his patients fewer. Besides, the cost of his special training is to be considered. However, the populace generally have a very exaggerated idea of the man in limited practice; the average layman seems to be rather entranced by the magic word *specialist*, and one is looked upon as a kind of superdoctor and apart from the common herd of the profession. While no exact statistics are available, it is entirely probable that a goodly percentage of the patients who now go directly to men in limited practice could be handled successfully by general men. In the campaign of lay education it would not be amiss to urge upon the layman the advisability of having a regular medical adviser in general practice to be consulted whenever necessary and allow this physician to refer him when the occasion arises.

The matter of professional fees is perennial. It was recognized in the code of Hammurabi, 4000 B.C., and the principle of the flexible fee there definitely established. This principle has been extant throughout the ages and is recognized now not only as applying to medical service but in property taxation and in jettison. What is an adequate fee? There are two points of consideration: the nature of the service rendered and the ability of the patient to pay. Great care should be exercised as to absolutely free work, but any charge should be well within the paying ability of the responsible party. Absolute charity, however, pauperizes and degrades the recipient in his own estimation. If possible, hospital free work should be eliminated entirely, the actual loss on this class of patients being borne by the community as a matter of taxation. The extension of installment paying, already applied so widely as to professional fees and to merchandise, should be extended to hospital bills as well, although some form of guaranty would be advisable.

Taxation as a factor in medical care is quite an item, especially the tariff. It would seem that even the most hard-boiled "standpatter" might be moved to look upon a tariff on hospital and medical necessities as a tax on suffering and agree to its repeal. Moreover, hospitals not maintained for profit might well be exempted from local taxation.

Benevolences play a great part in the betterment of American life, but do not come in for as large a share in the health program as one would expect. Of the total gifts to benevolent objects, 7.4% go to hospitals and only a total of 9.2% to all health activities. It would seem, then, that the claims of hospitals, health movements, medical schools, and research foundations should be more urgently presented to givers.

And now we come to the two great factors which will ultimately be of most value in lessening the burden of ill health—the practice of preventive medicine, and health insurance. Public health work is an absolute necessity, but should stay within its legitimate sphere, while the private practice of preventive medicine should become common by the general practitioner. Of every dollar spent for medical care, three cents goes for prevention and the remainder for cure. We do not even live up to the old adage of "an ounce of prevention and a pound of cure"; as a matter of fact, we use a little

less than an ounce of prevention to two pounds of cure. A much larger proportion of the total expenditure should go to preventive work. The specific items of most value in prevention, from the viewpoint of the average doctor, are periodic health examinations, inoculations (especially against smallpox, typhoid, and diphtheria), and advice as to habits.

We have seen that the burden of illness usually falls on a relatively small proportion of the population; hence the matter of distribution of costs is a very vital one. Our cost hazards of life and fire have already been distributed by insurance; why not our health hazards? True, there is considerable health insurance in force, but not nearly enough, and what is now written covers largely those who actually need it least—those in the upper strata of incomes. Some plan must be evolved whereby health insurance covers the masses. Now it protects the individual; it should be developed to cover not only the breadwinner but the entire family, certainly as far as hospitalizing illness is concerned. When the distribution of cost by a proper system of health insurance is a *fait accompli*, and preventive medicine is correctly practiced, the problem of the cost of medical care will have been solved, or at least reduced to its lowest terms.

HISTORY, SYMPTOMS, DIAGNOSIS, AND IMMEDIATE TREATMENT OF ACUTE POLIOMYELITIS *

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The story of the development of our knowledge of poliomyelitis does not follow a single path continuously from the earliest beginnings to the present time, but rather represents the converging of several lines of study. Three distinct avenues of study present themselves: the clinical, the pathological, and the experimental. Each of these has a very definite history, and the contributions to each path have been made by various observers quite distinct from those working in other paths.

The first observation of the clinical phase of the disease was probably made by Underwood in 1774. His description was very meager, and only suggests that he recognized the fact that children might suddenly become paralyzed after a brief illness.

The next mention of the disease in literature is that made by the English physician, Badham, in 1835. His description was much more definite and had to do with a small group of children in a circumscribed neighborhood.

There can be very little doubt that Badham described acute poliomyelitis. The first systematic study of the clinical picture of this malady, however, was made by Jacob von Heine in 1840, in the village of Kolmar, Germany. Heine was an orthopedic surgeon and saw a great many cases of paralysis in children and became interested in the subject. His studies led him to investigate the stage of the disease not usually seen by the orthopedic surgeon, and he was the first to realize that this peculiar paralytic visitation was preceded by an acute febrile period. Heine's description of this phase of the disease demonstrates that he appreciated that there is a febrile reaction which may be so mild as to not arouse any anxiety in the minds of the parents, and pointed out, indeed, the great contrast between their feelings during the acute stage and later, when they suddenly discovered the paralyzed leg on the morning following the acute symptoms. To Von Heine undoubtedly belongs the credit for first having drawn attention to this disease as being a clinical entity, and also for having given the first complete description of it.

Following Heine's work the literature is barren of any discussion of the disease until 1884, when Strompell, of Vienna, described an encephalitic type which he believed to be similar to that true poliomyelitis anterior of children as described by Heine. He also drew attention to the fact that there were certain forms of acute neuritis in children which belonged also to this group. Thus he brought together the neuritic type, the poliomyelitis type, and the encephalitic type, and supposed that they were all one and the same disease. He also threw out the suggestion, which was the first of its kind, that the disease was of an infectious nature.

The next important step in the clinical study was that of Medin, who, in 1889, published a description of a large epidemic in Sweden. In Medin's work there appears for the first time an excellent description of the acute stage of the disease, and we are first given the impression that we have to do here not alone with a paralytic affliction but also with an acute general infection. Then again follows a long period of silence on the subject, until 1905, when Whickham, studying the vast epidemic in Sweden, developed what may well be considered the modern conception of the disease. His pathological,

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clinical, and epidemiological studies form a classical contribution to the growth of our knowledge of acute poliomyelitis, and established the disease finally as a clinical entity.

Whickham was the first to point out the so-called abortive type—a name which is undesirable and which has remained attached to those cases which never develop paralysis. His epidemiological studies also gave strong support to the view that the disease is transmitted by contact. Since Whickham, there have been numerous contributions to the clinical studies from various countries. Among others, extensive contributions have been made by Müller, Zappert, and from the hospital of the Rockefeller Institute.

The history of the development of our knowledge of the pathology of this disease probably begins with the description by the French in 1865. At that time Provost and Vulpian described an atrophy of the anterior horns and ganglion cells in old cases of poliomyelitis dying from other causes. This finding was corroborated in 1870 by Charcot and Joffroy, who also went further and developed the hypothesis that cells of the anterior horn were the tropic centers of nerve and muscle, and that they were the point of origin of the pathological process in poliomyelitis. In 1871, Roger and Damesceno, and in 1888, Rissler, made similar observations. Nothing further then appeared until the work of Whickham in 1905, when he published his extensive pathological studies from acute material of the large Swedish epidemic.

Whickham demonstrated, by the most painstaking and extensive investigation, the infiltration processes suggested by Roger and Damesceno, and also clearly showed the intimate association of the blood vessels with the whole process. In 1907 Strauss pointed out that cases examined shortly after death in the acute stage of the disease revealed a general swelling of the lymphatic apparatus throughout the body. Similar observations were mentioned in the same year by Harritz and Scheel, and again by Whickham in 1911.

In 1912 Flexner, Peabody and Draper noted that, aside from the lesions in the central nervous system, there were generally distributed lesions through the parenchymatous organs and lymphatic structure of the body.

The observation agreed well with the growing belief that the disease was not limited to the central nervous system, but was a general systemic infection.

Experimentation.—The third path in the growing knowledge of the disease is that of experimentation. The whole history of this phase of the investigation is of most recent date. It may be said practically to begin with the transmission to monkeys. Previous to this time there had been some attempt to work out a bacteriology, but without success.

The first successful transfer of this disease to monkeys was accomplished by Landsteiner and Popper in Vienna in 1909. But these observers failed to advance the study of the experimental disease further by reason of their inability to propagate the disease through a series of monkeys. They had used only the intraperitoneal route of injection. Within a few months Flexner and Lewis succeeded, by means of intracerebral inoculations, in carrying on the disease indefinitely from monkey to monkey. In rapid succession came confirmation of this method by Landsteiner and Levadti, Leiner and Weisner, and others. By this means it became possible to keep the virus growing indefinitely, and so to study its nature and its behavior toward various physical and chemical agents. Since then, contributions to the literature of experimental poliomyelitis have been numerous, and there have been developments in all branches of laboratory study of the disease. In 1909, independently of each other, Landsteiner and Levadti, and Flexner and Lewis, showed the virus to be filterable. Finally, in 1914, Flexner and Noguchi published the report of experiments on cultivation and isolation of an organism which seemed to be associated always with the disease. Most recent observations tend to confirm the observations that the organism of Flexner and Noguchi is the cause of the disease.

The first appearance of the disease in epidemic form seems to have been in 1858, in the Scandinavian peninsula. Gradually the outbreaks assumed significant proportions until 1905, when the disease occurred in pandemic form in Europe. The fluctuation in the virulence of the microörganism may have been responsible.

Flexner has demonstrated experimentally that the passage of the infectious organism from monkey to monkey leads to an increase in virulence.

No country seems to have escaped the ravages of the disease. It has occurred under extremes of latitude and under varying climatic conditions. The most extensive outbreaks have taken place in the northern parts of Europe and America.

The development of the power of epidemicity in this disease was first noted in Europe, and the

western hemisphere was not affected until several years later. It was not made a reportable disease in any country until recent years—Norway in 1904, Sweden in 1905, and England in 1911.

The authenticity of the earliest account of poliomyelitis, which was reported by Colmer in 1843, is often questioned, as it is based on hearsay evidence. Colmer wrote: "Whilst on a visit to the parish of West Felincia, Louisiana, in the fall of 1841, my attention was called to a child about one year old, then slowly recovering from an attack of hemiplegia. The parents told me that eight or ten other cases of either hemiplegia or paraplegia had occurred during the preceding three or four months within a few miles of their residence, all of which had either completely recovered or were decidedly improving. The little sufferers were invariably under two years of age, and the cause seemed to be the same in all; namely, teething."

Among the countries involved, the following may be noted:

Norway and Sweden—1881, 1886, 1905: The most extensive epidemic occurred in southern Sweden in 1905. It comprised 1,119 cases, with 145 deaths. Whickham investigated thoroughly 1,025 cases in this epidemic, giving special attention to the possibility of contagion, the frequency of abortive cases, and meningeal symptoms. He was the first to recognize that the disease is conveyed from person to person, and that the abortive as well as the paralyzed may spread the infection. In 1910 Denmark had an epidemic of 190 cases with 7 deaths; in 1911, 311 cases; in 1912, 371 cases; in 1913, 183 cases, and in 1914, 140 cases.

Germany—1909, over 2,000 cases; 1912, 197 cases; 1923, 550 cases; 1924, 507 cases.

Austria—1908-1909, 1,000 cases; 1910, 158 cases; 1912, 117 cases; 1913, 156 cases.

France—1909-1911, 100 cases.

Switzerland—1913-1922, 552 cases.

Italy—The disease prevailed since 1883; from 1910 to 1920 there were 3,411 cases.

Australia—1908, 137 cases; 1921-23, 600 cases.

New Zealand, Russia, Canada—All have had large and small epidemics.

Cuba—1907-1908, 140 cases.

United States—McPhail and Caverly recorded the first epidemic in the United States, which occurred in 1894 at Rutland, Vermont. There were at least 130 cases, most of which were in children, and but few adults were affected. From 1900 to 1910 there was a great increase in the size and severity of the epidemics. In 1907 poliomyelitis appeared for the first time over an extensive area of the United States, with the principal foci located in the state of Massachusetts. The original of this epidemic is in question.

The epidemic began in New York City in June, 1908, and reached its height in September. The exact figures of the number of cases are not available, but have been estimated at a minimum of 2,500. The chief sufferers were young children. The disease was mild, the mortality being but five per cent. Lovett and Lucas estimated the cases in Massachusetts at 234. At this time it also appeared at Oil City, Lehigh, DuBois, and Ridgeway, Pennsylvania; Galesburg, Wisconsin; in Michigan, and in Live Oak, Florida. The disease continued to prevail throughout 1908, but there were fewer cases than in the previous year. The largest outbreak was in Schenectady, New York, where twenty-nine cases were reported. In Massachusetts there were 136 cases. It was noted that localities which had been affected in 1907 were immune.

There was a considerable spread of the disease westward. Minneapolis had 150 cases; Flint, Michigan, had 30 cases, and Eau Claire, Wisconsin, had 408 cases.

After 1908 the disease spread rapidly, gaining force. In 1909, 923 cases were reported in Massachusetts. An analysis of the data collected for the years 1907, 1908, and 1909, in Massachusetts, revealed that the disease appeared in scattered foci in all parts of the state and showed a predilection for river valleys. Koplik reported 1,200 cases in New York, city and state.

In 1909 the disease was epidemic in Minnesota and the number of cases was estimated at between 800 and 900. In Nebraska 1,000 cases occurred between May and December. It might be well to note that in this state a quarantine regulation was put into effect and enforced for a period of three weeks. Twelve days after this ruling the disease was abruptly arrested.

In 1910 the disease assumed very serious proportions. The United States Census Bureau listed 1,459 deaths due to infantile paralysis. In the east the greatest prevalence was in Massachusetts (84[illegible] cases), New York (322 cases), Connecticut (168 cases), Rhode Island (231 cases). A large epidemic occurred in Pennsylvania—more than 1,000 cases with a mortality of twenty-two per cent. Minnesota, Virginia, District of Columbia, Washington, Oregon, and California also suffered large

outbreaks of the disease. The largest number of cases in any of the western states was reported from Minnesota, where an epidemic of 1,000 cases occurred. In Iowa, 654 cases were reported, of which 161 died. From Virginia 357 cases were reported; from Kansas, 189.

During the next five years the number of cases in the United States were lower. In 1911 the total number of cases in the United States was 2,500. The largest outbreaks were in Massachusetts, New York, Pennsylvania, Ohio, Illinois, and Virginia.

By 1912 notification of the disease had been made obligatory in twenty states. The number of cases for that year in the United States was nearly 4,000, with a mortality rate of 19.7%. The disease was again prevalent in New York, and 934 cases were reported, with 125 deaths. Of these cases, 504 were in the city of New York. Another large focus in New York state was in Buffalo, where over 300 cases occurred, with a mortality of twelve per cent. Massachusetts reported 169 cases; Pennsylvania, 267 cases; Ohio, 354 cases; Illinois, 480 cases; Virginia, 229 cases, and California, 531 cases.

In 1913 approximately 3,000 cases occurred throughout the United States. The largest outbreaks were reported from the states of New York, Massachusetts, Virginia, Illinois, and Indiana. There was also an epidemic of 50 cases in Texarkana, Arkansas.

During 1914 the entire country reported about 2,000 cases. Vermont suffered an epidemic of 300 cases at Barton and Burlington, while at Rutland there were no cases.

In 1915 about 2,000 cases were reported in the United States—Ohio with 466, the greatest number from any one state. It also appeared in Massachusetts, New York, Pennsylvania, Minnesota, and Virginia.

In 1916 an epidemic, unprecedented in geographical extent and severity, occurred in the United States. It was distributed over eight states, reaching eastward to Boston, westward to Chicago, and southward to Baltimore. Boston and New York were the chief centers of the outbreak. Nearly every state in the country suffered. Nevada, New Mexico, Georgia, and California were the only states free from the disease. The epidemic started the second week in June in New York city, along the waterfront in the borough of Brooklyn, and extended first toward Bay Ridge, then to the Brownsville section of Brooklyn. The infection spread rapidly along lines of communication, both by rail and water routes, to the towns of Long Island and New Jersey. By July 15 the disease was increasing in Philadelphia, Bridgeport, and Camden, and by August 1 it was prevalent in Boston, Baltimore, Chicago, Providence, St. Paul, and Syracuse. A focus of the disease would appear, to increase in severity until it reached its height in about six weeks, and then gradually decrease.

The epidemic showed its customary irregularity in distribution, in that some places along the lines of public travel, such as Jersey City and Hoboken, located near and in close association with New York city, escaped with only a few cases; while Newark, New Jersey, which was farther away, suffered severely.

Between June and December, 1916, more than 13,000 cases had been reported in New York state alone, and more than two-thirds of them in New York city.

A higher proportion of the population was affected in the rural districts than in New York or other cities—1.59% per 1,000 for New York city, and 2.4% per 1,000 for rural New York. The highest recorded sick rate for the year was a little less than four per cent, for Newark, New Jersey.

The majority of the cases in this epidemic were in children from one to five years of age. The age incidence of the cases in the rural districts differed from that of the patients in the city. Outside of the city of New York only fifty-five per cent of the children were under five years of age, and ten per cent were over fifteen years of age. In the city, ninety per cent were under five years of age, and one and seven-tenths per cent over sixteen years.

A review of the history of this disease is interesting because it shows that, while the paralysis has always been the central thought about which all discussion centered, nevertheless every description of the disease, from the time of Badham in 1835, also contained remarks which indicated that the observer had recognized the presence of certain symptoms characteristic of acute infections. From the very first all have agreed that there was an acute stage in poliomyelitis. Usually this stage was looked upon as representing the prodromal period which, with varying severity, ushered in the paralytic attack. The demonstration by Whickham of the "abortive" or non-paralytic forms went far to break down this view and to initiate our present conception of an acute systemic infectious disease in which paralysis may or may not occur.

Seasonal Prevalence.—The disease is more prev-

alent in the warmer months of the year, occurring in July, August, September, and October, in the northern hemisphere, and in March and April in the southern hemisphere. There have been exceptions to this rule. There have been winter epidemics. West Virginia came to the fore in this respect with a severe outbreak in Grafton.

Aycock and Eaton, from a compilation of the morbidity and mortality statistics, reported that case fatality was found much higher in winter than in spring. The relation of rainfall to the occurrence of epidemics has no relation whatsoever.

Periodicity.—The tendency for epidemics to recur has never been satisfactorily explained. Flexner has shown experimentally that the virus tends to increase in activity until it reaches a high point. It maintains this state of virulence for a long period, even up to three years, and suddenly becomes avirulent. Possibly several factors are responsible for the recrudescence of the disease after a lapse of years.

The virus may be imported from a locality which has suffered a recent epidemic. It may survive in a latent state from a previous epidemic, and suddenly become active. On the other hand, the relatively low susceptibility of individuals suggests that many acquire immunity by exposure in other epidemics, so that the disease is not likely to recur until there is a fertile nucleus.

Susceptibility.—There seems to exist a wide variation of individual susceptibility. Even within one family, children openly exposed to the disease—even occupying the same bed with the sick child—have not contracted infantile paralysis. Susceptibility is present in only two per cent of children under thirteen years of age, which rate is lower than that of the predisposition to other communicable diseases.

The greatest susceptibility exists between the ages of two and five years. The greatest period is the second year. Infants are rarely affected, possibly because they are seldom in contact with children. After the age of five years the incidence declines.

Singular as it may seem, the age of those affected in the country is higher than those in the cities. Shaw has shown, in a study of 4,186 cases in the 1916 epidemic, that 90% of the cases in the city of New York were under five years of age, while in the rural districts 55% were under five years—10% were over fifteen years.

It is difficult to explain the susceptibility between the ages of two and five years. The theory advanced by some investigators is that poliomyelitis, with its pathological affinity for ganglionic motor cells, finds ready victims among children between the ages of two and five years, an acute development period.

In general, boys and girls are equally susceptible. There is no racial susceptibility. Quoting Draper: "Every one who has worked in poliomyelitis wards has been impressed with the great number of large, healthy, well-nourished children afflicted with the disease. In common it may be said that these patients are large for their age, well nourished, plump, and with faces with rounded form."

One outstanding feature was noted in the Locust Valley epidemic—the children had spaced central incisors. Among adults, instead of large, well-developed individuals, they were of the slim build, slender in type, close-grounded teeth, mostly brunettes, high-colored cheeks and lips.

Immunity.—One attack confers immunity for life. Immunity is not conferred from parent to offspring.

Morality.—The mortality rate has ranged from 5% to 40% in various epidemics.

Modes of Transmission.—There are many theories as to the manner in which the disease is spread. The exact method of spread is not known, but it is probably due to droplet infection of Flugge carried to the upper respiratory tract; also from the secretions and dejecta.

Human Carriers.—There seems to be little doubt that human carriers play an important part in the diffusion of the disease, since the virus has been proved to exist on the mucous membrane of the nose and throat. Whickham and Flexner are the chief advocates of the theory that the disease is communicated by direct contact in sneezing, coughing, kissing, and even in loud speaking. Such conclusion is based on clinical and experimental observations. Some inconsistencies are found in this theory. Definite contact can be traced in only a small proportion of the cases. The occurrence of more than one case in a family is uncommon, and where more than one case occurs, it is questionable which ones are truly secondary.

Aycock and Eaton, from a study of a series of multiple paralyzed cases in 253 families, concluded that a large proportion of the secondary cases can be traced to the same source as the primary cases. In the epidemic in New York in 1916, only four per cent of 8,635 families attacked suffered more than one case. In the Pennsylvania epidemic in 1910 there were incidences of 289 children sleeping

in the same room with paralyzed children and only 24 of them contracted the disease. It is evident, from the above-mentioned inconsistencies, that other factors must play a rôle in the disease.

Mechanical Transference.—The theory of mechanical transference of the disease is supported by clinical and experimental evidence.

Dust from the sickroom (Nenstaeder and Josepheu, and Müller.)

Foodstuffs. (Dingman Milk; also Aycock and Lovett.)

Insects (chiefly flies, mosquitoes, fleas, and bedbugs).

Domestic animals and poultry.

Damp earth.

Air-borne.

(The last four theories mentioned have not been substantiated.)

Precautionary Measures in General.—1. Home life favors a preventive program. Prohibit running about.

2. Avoid all food and drink except when served at home.

3. Do not handle pets.

4. Protect child from insects and vermin.

5. Keep the child from fondling, kissing, and handshaking.

6. Avoid bathing and swimming in polluted water.

7. Have the slightest digestive disturbance attended to.

8. Promote general cleanliness, personal as well as domestic; screen the house from flies, mosquitoes, destroying all refuse.

Precautionary Measures in Cases of Known Exposure.—Quarantine for fourteen days and administer urotropin every five hours to children from one to five years old.

In Case of Infection.—Isolation from three to four weeks.

1. Separate room. Only attending physician and nurse admitted.

2. The attendant nurse must not perform any other household duty.

3. All discharges from the patient should be disinfected; all eating utensils, personal clothing, and bed linen should be disinfected.

4. The nurse should wear a cap, gown, and mask, and this is equally true of the attending physician.

The premises should be suitably placarded by the local board of health.

Virus.—The virus belongs to the filterable class. It will pass through the pores of a Berkfield filter and asbestos. It withstands exposure to light, drying, freezing, heat, and glycerination for a long time. Even at the height of summer heat, and when dried on clothing, it retains its virulence. Five-tenths solution of phenol, applied for three days, does not render the virus inactive. Bile has no effect on it. Its activity persists in water and milk after thirty days. It may be frozen at 2° C. to 4° C. for four days without showing any material damage. Conditions leading to the destruction of the virus are exposure to heat of 50° C. for one-half hour; exposure to sunlight, and the action of O. S. T. 2% solution of hydrogen peroxide, menthol solutions, iodine, and other stronger disinfectants. The virus shows fluctuation in the human body and in monkeys. In man, the virus is probably the most infective in the first three weeks, after which time it begins to be attenuated. It may, however, retain its strength over long periods. Flexner and Amoss infected monkeys with virus over six years old.

Method of Egress of the Virus.—The mucous membrane of the nasopharynx seems to be the portal of entrance. In this locality it was detected in paralyzed monkeys.

Distribution of the Virus in the Human Body.—The virus has been demonstrated in the brain, cord, medulla, nasal ganglia, cervical and lumbar enlargements of the cord, posterior root ganglia, and in the sympathetic ganglia. In organs outside the nervous system it has been found in the nasopharyngeal mucosæ, the tonsils, the mesenteric glands, and in the lymph glands. The tonsil is considered by some investigators to play an important rôle in the disease. The filtrate from the tonsils, when freed of bacteria, caused the disease in monkeys when injected intrathecally.

The failure to demonstrate the virus in the spinal fluid causes some wonderment. Cullens, from the spinal fluid of 1,200 cases, failed to produce the virus. Also, the presence of virus in the human blood has not been demonstrated. Apparently some protective mechanism excludes the virus from the blood.

In monkeys the virus has been found to disappear from the central nervous system in from three to six months. In man, the virus grows weaker after the first eight to fourteen days, and usually disappears at the end of the fourth week.

The infection must encounter considerable resist-

ance, as only a small percentage of the population exposed are infected.

Types of Poliomyelitis.—Seven types of poliomyelitis have been recognized, as follows:

Abortive.
Ordinary Spinal (type most commonly seen).
Bulbospinal.
Progressive or Landry's Paralysis.
Meningeal.
Cerebral or polioencephalitic.
Polyneuritic.

Symptoms.—I would like to call your attention to a division of types as noted by Draper. He divides poliomyelitis into three types with reference to invasion and ultimate result of the disease at the time of invasion. He has seen fit to liken one group, which he calls the "dromedary type," to the humps on a camel's back. It is a well-known fact that, after a child has become paralyzed, one is able, by close questioning, to elicit from the mother the fact that from three hours to eight days previous the child has suffered from some indisposition, such as sore throat or a bowel disorder. This first set of symptoms is used to represent the first "hump." Then we have a period of apparent freedom from illness which has been noted to vary from three hours to eight days. Then comes the full blast of the infection, the second "hump," with all the previous symptoms so common to this infection, which may end in paralysis, muscular weakness, or death.

The second group has been typed by Draper as the "straggling" group, in which there is no decided change of note in the child and the symptoms become more pronounced as time passes and the full picture of poliomyelitis eventually is present. There is no absolute remission of symptoms, as in the so-called dromedary type.

The third or last group is characterized by a condition picturing the direct assault of the virus in the nervous system from the start of the illness with no intervening period of apparent remission of symptoms. This outline refers only to the behavior of the disease as a whole.

In its early hours the clinical course of acute poliomyelitis resembles in general that of acute infectious diseases of childhood. Fever is almost invariably present, with its attendant restlessness and dry-mouthed discomfort. The picture in the individual case is colored by symptoms depending on which particular set of organs is chiefly involved.

Perhaps the most usual form is a disturbance of the gastrointestinal tract, simulating a simple "summer diarrhea." Vomiting is a very frequent symptom; but tonsillar and pharyngeal inflammation or upper respiratory tract symptoms are not uncommon. Still, even in the midst of an epidemic, it is hard to realize that the flushed, hot, restless patient is already in the grip of the insidious disease that may cripple for life if it does not kill. These symptoms represent a full development of the disease and not what was once thought to be the prodromes.

At this period of the disease it is impossible to determine whether the subsequent course will be dromedary or straggling in type, or whether it will terminate at the end of the systemic stage.

To say that the temperature is elevated, often as high as 103° or 104°, and that the child is flushed and miserable, that vomiting often occurs and that drowsiness supervenes, does not offer sufficiently distinguishing evidence of the special type of infection. Quoting Draper: "Nevertheless, in acute poliomyelitis, the common symptom complex is shot through with delicate manifestations that are unmistakably specific, but which must still be viewed as clinical impressions—*those helpful though indefinite aids in diagnosis.*"

In the presence of an epidemic, without exception all speak of the peculiar expression of the eyes. For, besides a glazed-porcelain quality of the sclera and cornea, and not infrequently a puffiness of the circumorbital tissues, there is a look of mingled apprehension and resentfulness, quite unlike the alert, bright and shining eyes of other fevers. The psychic change responsible for this look finds further expression in a characteristically annoyed shrugging of the shoulder if the child is touched or spoken to.

There is, besides, a smaller number of cases that present certain perfectly definite signs of disturbance of the central nervous system. These are cases of overwhelming infection, where, for example, after six or eight hours of illness the spinal fluid shows 1,500 to 2,500 cells per cubic centimeter. Again the temperature is high and the usual picture of a sick, feverish child appears; but, in addition, there are other striking phenomena. The child is restless, breathes rapidly, and seems to be busily and actively resisting some incomprehensible disturbance of its usual comfort. In these instances the irritability and resentful manner are not marked, but the whole organism seems to be composed of tensely drawn wires—a general overstimulation. This pressor state of the nervous system is so marked that a sort of impulsive ataxic tremor is present in every motion, especially when that motion has intent.

One physical sign of great importance has been designated the "spine sign." It depends upon the fact that in acute poliomyelitis any manipulation which hangs about anterior bending of the spine causes pain, and therefore is resisted by the patient.

This conscious effort is often carried to a moderate degree of opisthotonos, and is the cause of the unwillingness of children with this disease to be picked up and handled, even by the mother. The phenomena may be present before any invasion of the meninges, as has been proven by negative spinal-fluid findings.

Aside from refraining from play and securing a place of comfort, there may be nothing definite save a mild spinal sign. One striking fact is that there may be no sign of central nervous system involvement.

It is important that we detect when invasion of the meninges takes place; *i.e.*, when the systemic phase passes over to the meningeal. Sudden definite increase of the spine sign may indicate invasion, rapidly developing headache, or disturbance of tendon reflexes. From the standpoint of treatment early detection of central nervous involvement is most important, for, to be of avail, serum must be administered as soon as the condition is definitely suspected, even though frequent spinal punctures are resorted to. The use of immune serum is just as important before the central nervous involvement is made sure of, not only by the spinal route but also intravenously and subcutaneously.

Spinal Type.—The onset may be sudden, though an insidious development is not unknown. The early symptoms consist of fever, drowsiness, sweating, headache, gastroenteric disturbance, pain, hyperesthesia and occasionally sore throat and difficulty with micturition and defecation; meningitic symptoms, such as twitching and muscular tremors, with diminution or loss of reflexes; rigidity of the neck (spine sign) is one of the last symptoms to disappear.

Paralysis usually develops within two to four days after the onset of the attack, after which time it is less likely to occur. The paralysis is flaccid, though paralysis may occur abruptly (Draper's division of immediate onset type). A period of spontaneous recovery, lasting six months to a year, follows the paralysis. The final paralysis is less than the initial, and is more partial than total. The muscles of the upper and lower limbs are more frequently involved than other parts of the body. If correctional precautions are taken at this time, there is less likelihood of subsequent deformity and loss of muscle equilibrium.

Polyneuritic Type.—This type resembles neuritis. The neuritis appears in the early paralytic stage, when the tenderness begins to subside, and lasts for two weeks or longer. The pain and tenderness may be so great that the paralysis is overlooked, and a diagnosis of rheumatism, or possibly scurvy, is made. The pain may be so acute as to cause the child to hold the limbs rigid. A combination of flaccidity and rigidity may cause many mistakes.

Meningitic Type.—Practically all cases of poliomyelitis show signs of meningeal involvement. These symptoms may appear at the onset of the disease or they may not set in until a few days after the general systemic symptoms. Headache, vomiting, rigidity of the neck and back, opisthotonos, delirium, coma, Kernig's sign, strabismus, tonic and clonic spasms and twitching of the muscles are the common symptoms. These may be vasomotor disturbances, such as flushing and paling. Tache cerebrale may be present; as paralysis also occurs in tuberculous meningitis, the chance for error is great except for lumbar puncture and spinal-fluid diagnosis.

As a general rule, the meningeal symptoms disappear within a few days and the prognosis is good as to recovery. If the symptoms fail to clear up promptly, the patient usually dies.

The Progressive Form.—Included in this group is the great majority of fatal cases. Death occurs from involvement of the diaphragm or intercostal muscles. The paralysis may be ascending or descending in character. The ascending type resembles Landry's paralysis, in which first the legs, then the intercostal muscles, arms, neck, and finally the diaphragm are involved. In most cases the initial paralysis is more extensive, involving both legs and arms. The progression of the paralysis is not uniform. In rare cases it advances rapidly without intermission, and death occurs within a few hours or days.

Usually, there is a cessation for a few hours or days after onset, and the paralysis again starts on its upward course. Before the respiratory centers are reached, the paralysis may have ceased its progression several times. The entire course may cover six or seven days. The first sign indicating the progression of the paralysis is laryngeal disturbance, loss of voice, and difficulty in swallowing.

As the respiratory center becomes involved, the breathing becomes more rapid, irregular, and labored. As the diaphragm weakens, the neck muscles become more prominent, the sternocleido mastoids pull on the clavicle, the head is thrown back, and the jaw dropped forward in the effort to breathe. Profuse sweating occurs. Breathing eventually ceases in practically all cases. The lungs remain clear until death in many of these fatal cases. Occasionally, pulmonary edema may develop. In paralysis of the diaphragm, bronchopneumonia may develop and result in death.

The heart action usually shows some changes, the rate being increased and the rhythm affected. In other cases, the heart may remain strong and regular until the end. The fever course is about the same as that in the cases which recover.

The mental condition of these cases is interesting; usually the mind is clear and alert until within a few hours of death. The child concentrates his whole effort on breathing. He is nervous, excited, and requires constant attention. He fears being left alone.

The ascending type of paralysis is more common than the descending. In the latter group, the paralysis begins in the upper segment of the cord and extends down until the lower limbs are involved.

Bulbar Type.—In a small proportion of cases the inflammation process extends to the medulla and pons, resulting in the involvement of the cranial nerve nuclei. This lesion is commonly found in conjunction with spinal paralysis, but cases of bulbar involvement alone are not uncommon. When paralysis of the cranial nerves is isolated, it is more persistent and severe than when it occurs with spinal paralysis. In both bulbar and bulbospinal paralysis the lesions are usually unilateral.

The symptoms depend on the nuclei involved. The facial nerve is the most often affected, the entire nerve or one branch being involved. Paralysis of deglution is frequently seen; it usually occurs at the onset of the disease and usually lasts for a few days. In bulbar paralysis alone it may persist longer, but it usually clears up in about ten days. The hypoglossal nerve may be involved, causing disturbance of deglutition, the patient being unable to protrude his tongue. The muscles of the tongue atrophy rather rapidly, but function is not lost. Occasionally the vagus is involved, resulting in disturbances of cardiac action and respiration. Such cases often end fatally. Disturbances of phonation in the bulbospinal type vary from a slight hoarseness or weakness to complete aphonia. This difficulty occurs early and is only temporary. The third nerve may be involved, giving complete or partial ophthalmoplegia. Involvement of the sixth nerve is most common, giving rise to convergent strabismus. Blindness may occur in some cases, and also deafness.

Ataxia frequently occurs, and is noted during convalescence. When the child begins to walk, it has difficulty in maintaining equilibrium. The legs are slightly spastic, and the knee-joint and ankle reflexes are increased. The diagnosis of bulbar paralysis is evident when the cord is affected and limb paralysis is present. It is easy to recognize this type when there are other cases in the family or neighborhood. It may be mistaken for laryngeal diphtheria. The paralysis seldom spreads to the phrenic or cervical centers, and a fatal outcome is unusual.

The Cerebral Type.—In this type the chief lesion is located in the cerebrum, giving rise to spastic paralysis. The most prominent symptoms at the onset are convulsions, vomiting, and fever; otherwise the onset simulates the ordinary spinal type. The cerebral type shows its nature from the beginning. The paralysis may be deferred in some cases for a week or so. The paralysis may be monoplegic or hemiplegic. Paralysis of the face is less common than in other forms. The paralysis is spastic except where the upper and lower neurons are involved. Reflexes are exaggerated, and there is *no reaction* of degeneration. The initial paralysis clears up, but there is some loss of power and a tendency to contraction. Epilepsy and epileptiform convulsions are limited to the paralyzed side. Ataxia and athetosis have been noted. This type has been determined a variety of poliomyelitis by the finding in all epidemics of cases having both spastic and flaccid paralysis, animal experiments confirming the diagnosis.

Clinical Diagnosis.—Fever; pain and stiffness of the neck; hyperesthesia; nervous irritabililty; Kernig's sign; Brudzinski's head-and-leg sign; spine sign.

Spinal puncture: Normal 5-10 cells; poliomyelitis, 16-20 to hundreds; increase in cells. Polymorphonuclears early, later giving way to mononuclear lymphocytes.

(*a*) Protein and globulin increased; (*b*) foam

test; (*c*) Lang's colloidal gold test; (*d*) Fehling's reaction; (*e*) chemistry.

Differential Diagnosis.—Rheumatism; grippe; diarrhea; gastroenteritis; acidosis; nephritis with uremia.

From Diseases Involving the Nervous System.—Tubercular meningitis—Lumbar puncture: Cells more numerous, same type; Fehling's solution slowly reduced; tuberculosis bacilli found in some cases.

From Tubercular Meningitis.—Clinical: Early symptoms are similar to poliomyelitis. The appearance of the patient: irregular temperature, paralysis fleeting in character; examination of eye ground.

Von Pirquet.

From Syphilitic Meningitis, Meningism, Purulent Meningitis, Epidemic Cerebrospinal Meningitis.—Scurvy; hysteria.

Prognosis to Life.—Location of lesion. Age of patient, high below one year; one to five, mean; highest as adult life is approached. Whickham, up to 11 years, 11.9%; Whickham, 12 to 32 years, 27.6%.

Grave signs: Stuporous and irritable cases rarely proved fatal. Alert cerebration is of serious import. Death usually occurs between the third and eighth day. Death after the eighth day is usually due to complications. The mortality is not the same in the same locality in different epidemics (New York, 1907, 5%; 1916, 26.9%).

Prognosis as to Paralysis.—Draper believes that the cell count during the first twelve to eighteen hours after meningeal invasion is a help in prognostication; with a cell count under 100 per centimeter, paralysis rarely developed. Patients with a count of 200 to 500 cm. usually become paralyzed. Cell counts of 700 to 1,000 cm. in the early hours resulted fatally.

Paralysis occurs the third to the fourth day; rarely after the eighth. The initial paralysis, as a rule, is final. Reinfection is not unknown.

Treatment.—Serum: Immune, not over six months of age (Wells): Intraspinally, 5–10 c.c.; intravenously, 8–50 c.c.; intramuscularly, 6–30 c.c.

Administration of serum: On suspicion, not waiting for a lumbar puncture, intravenously or subcutaneously. If lumbar puncture is positive, administer intraspinally and give another intravenous dose.

DISCUSSION OF LIPIODOL IN BRONCHIECTASIS *

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The object of this paper is to give you my experiences with lipiodol in the diagnosis and treatment of bronchiectasis. It will not be a lengthy review of the literature on the subject. I am aware of the fact that much has been written both for and against the method.

Lipiodol is a combination of poppy-seed oil and iodine. As manufactured by the French firm of Lafay, forty per cent by weight of iodine can be incorporated in the oil. The properties of lipiodol are opacity to the x-ray, a high specific gravity, an absence of any irritating action on the mucous membrane, an antiseptic and analgesic action, lubrication, and so firm a combination of the iodine with the oil that none of the ordinary effects of iodine are experienced, unless acted on by the alkaline digestive juices of the small intestine. Being of a thick, viscid nature, it clings tenaciously to the walls of the bronchi. Some cases show traces of the oil three weeks after injection. The chief value of lipiodol is in demonstrating the presence or absence of non-obstructing bronchiectasis, and in the treatment of the disease.

The diagnosis of bronchiectasis, in some cases (and, I believe, in the majority of cases), is almost impossible by physical signs alone. It may be suspected by the history, but not all patients will expectorate large quantities of mucus and pus. Some patients will be found that have a small amount of bronchiectasis and give so little physical signs that the true condition is not even suspected. These cases are the ones we find relegated to the class of chronic bronchitis. They usually get a cold early in the fall and keep it all winter. Through the summer they clear up, only to come back with cold weather. Diagnosis of small or large amounts of bronchiectasis is so easy with lipiodol, and the results appear to be so good, that I believe any patient having a cough lasting over six weeks and, as far as possible to determine, not tubercular, should have lipiodol injected for diagnosis. It is noticeable how the patients will come back and ask for a second or a third injection, which is excellent proof of benefit to the patient. As regards the injection of tuberculous patients with lipiodol, I have personally never

* Read before the Kanawha Medical Society at Charleston, West Virginia, on March 18, 1930.

used it where there was any doubt about tuberculosis being present. I do believe that some one will discover a drug that can be introduced in oil into the trachea and which will be beneficial in tuberculosis.

Sicard, in France, was the first to experiment with lipiodol as a diagnostic agent, working on the nervous system. Some time before 1922 it had been used as a therapeutic agent injected locally in cases of lumbago, sciatica, arthritis, and into the spinal fluid. It was from x-ray films of these cases that its possibilities as an opaque medium for diagnosis were recognized. Forestier, working with Sicard, first experimented on animals, and later injected the first lipiodol into the human trachea.

What becomes of lipiodol after injection into the bronchi? Forestier and Sicard tell us that "Some is coughed up and swallowed, some is expectorated, but after 24 hours the sputum is free of iodine. Lipiodol is then absorbed slowly in the lung and the urine will give iodine tests for several days.' Consensus of opinion seems to bear out the fact that lipiodol is expelled from broncihectatic lungs more quickly than from normal lungs.

There are several methods used for introducing iodized oil into the tracheo-bronchial tree:

1. The subglottic, or intercricoid, method. A needle is inserted through the cricothyroid membrane directly into the larynx, through which the oil is injected into the trachea.

2. The transglottic method. Following complete anesthetization of the pharynx and larynx, a laryngeal cannula is inserted and a syringe used to inject the oil.

3. Bronchoscopic method.

4. Passive method. The anterior surface of the anterior pillars are swabbed with cocaine until the swallowing reflex is abolished. Then, by protruding the tongue and holding the head back, novocain first and then the iodized oil will flow into the larynx.

5. Intratracheal method. Several different intratracheal methods have been developed. This is the one I have used exclusively, and is described in detail: First, the patient is requested to report at the appointed time with an empty stomach. A hypodermic injection of one-eighth to one-fourth grain of morphine is given. Equal parts of a 1/1,000 solution of adrenalin chloride and a twelve-per-cent solution of cocaine are mixed together. This solution is then swabbed on the lips, tongue, pharynx, and larynx, and repeated until good anesthesia is obtained. Then, holding out the tongue, a No. 16 rubber catheter is inserted into the larynx and pushed well into the trachea. Two cubic centimeters of the above-mentioned solution is then injected to abolish the cough reflex. The warmed lipiodol is then injected from a Luer syringe into the trachea. The patient leans toward the side you wish the oil to reach. Sometimes it is advantageous to have the patient reclining. Again, you may wish to have him under the fluoroscope while injecting the oil.

In diagnosis much can be determined with the aid of lipiodol. An occasional case expectorating large quantities of pus will not give definite signs of bronchiectasis after injection. However, the patient will most likely return and request another treatment. The diagnosis of bronchiectasis is certainly more sure with lipiodol injection than by any other method except bronchoscopic examination. The heavy oil will flow by force of gravity to fill the bronchial tree, and, if there are dilatations present, small or large pools of oil form and will show plainly on the x-ray films.

Encouraging results have been our experience in using it therapeutically. There is no question as to its value in diagnosis; but it is still experimental as a curative agent. In our small series of cases I have had 63.6% markedly improved, 18.2% questionably improved, and 18.2% with no improvement. In none of our cases has the continued injection of oil made matters worse. There is always the soothing effect of the oil for one or two days, a marked reduction in the quantity of expectorant material, and an alleviation of the cough. One of our patients developed signs of toxic goiter after several injections. He showed, finally, exophthalmos, tremor, and enlargement of the thyroid gland. He was not given any more treatments and has made a good recovery, except for a slight exophthalmos.

We do not consider the use of lipiodol dangerous or harmful. Our results have been pleasing. The technique of injection is not difficult. It offers more in the treatment of bronchiectasis than anything we have tried, except change of climate, and we believe in the future lipiodol will be proven more and more satisfactory as a therapeutic agent in bronchiectasis.

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LESIONS ORIGINATING IN THE MUCOUS MEMBRANE OF THE MOUTH *

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There are probably no diseases in medicine that the physician approaches with as much diffidence as the various diseases that originate in the mucous membrane of the mouth. Diseases of the mouth are not limited to any particular specialty, nor are they taught in any one branch of medical school; which is perhaps the reason the majority of physicians never receive definite information regarding them

These cases are so scattered that seldom does any one physician see enough of them to make a conclusive study of that type of disease. This sort of vicious circle is probably the reason why diseases of the mouth are so often neglected, and the patient passed from one doctor to another, with no definite advice, diagnosis, or proper treatment having been instituted. In view of these facts, I feel that this subject is of vital importance to all physicians and should be given more careful study, if patients suffering from diseases of the mouth are to be properly cared for. Early and proper attention here is as important as the treatment of diseases anywhere else in the body, if not more important.

The following diseases and conditions should be mentioned as originating in the mucous membrane of the mouth: Ulcers of the mouth (and there are many different kinds); Vincent's angina; pyorrhea; leukoplakia; Fordyce's disease; retention cysts of the lip; the various forms of epithelioma; epulis; papilloma, and other new growths; local conditions that are part of a generalized skin eruption or a constitutional disease, such as syphilis, lichen planus, lupus erythematosus, pemphigus, diphtheria, impetigo contagiosa, eczema, fever blisters, suppurative tonsillitis, etc. Secondary infections from the nose sinus and tonsils also have to be considered. Furrowed tongue; black tongue; various secretory disturbances, such as acid mouth; a rare condition of the tongue known as glossitis rhombica mediana; chronic glossitis; Moeller's glossitis; cheilitis glandularis; cheilitis exfoliativa; perleche; blastomycosis; actinomycosis; sporotrichosis; filiform verruca; and traumatic and primary syphilitic lesions arising in the mucous membrane are also to be mentioned.

The diagnosis of "ulcers of the mouth" is not, of course, a complete diagnosis, although it is a very good tentative finding in some cases, until the exact origin of the ulcer has been discovered. This often is a most difficult problem, and clinically an absolute diagnosis often can not be made, it being necessary to utilize various laboratory tests, such as smears, cultures, microscopic examination of tissue, x-ray pictures, etc., and in some cases a therapeutic test is justifiable, or a diagnosis may be made by exclusion.

Under the name of recurrent ulcers should probably be mentioned the little canker sores that are so common in children and less frequently found in adults, due to some error in diet, indigestion, or constitutional disturbances. Recurrent ulcers also result from ingestion of drugs, such as phenolphthalein, luminal, phenobarbital, acetphenetidin, and antipyrine. An ulcer may be associated with some dental defect such as a root abscess, in which case a good dentist may be required to make the diagnosis as well as to remove the cause, before the ulcer will disappear. It must not be forgotten that a röntgenogram may be of great assistance in a case of this nature.

Another ulcer which is quite common is one due to syphilis, the appearance of which, of course, depends upon whether the lesion is primary (meaning a hard chancre), an ulcer occurring in the second stage of syphilis, such as an ulcerated mucous patch, or a tertiary lesion such as an ulcerated gumma. Time will not permit a detailed description of each of these various lesions, and again it may require the assistance of a laboratory to make a diagnosis.

Tubercular ulcers are very rare, and when they do occur they are always secondary to tuberculosis of the lungs. A sputum analysis, x-ray of the lungs, and physical examination of the chest may be indicated in this form of ulceration.

Traumatic ulcers of the mouth result from any form of trauma to the mucous membrane, and should be recognized early. If allowed to progress and the causative factor is not removed, it will result in carcinoma, sooner or later. The causative factor may be an ill-fitting dental plate, a ragged tooth, continual smoking of a pipe or cigar, or tobacco chewing.

Vincent's angina, commonly known as "trench mouth," is an infectious disorder of the mucous membrane due to the *Bacillus fusiformis* and Vincent's spirillum, and is characterized by the irregularly shaped, superficial ulcers covered with a grayish membrane. The diagnosis, of course, can be confirmed by microscopic examination.

* Original contribution.

Pyorrhea is a chronic, purulent inflammation of the dental periosteum, with progressive necrosis of the alveoli and looseness of the teeth. It is a disease quite common, quite readily diagnosed, and, of course, belongs almost entirely to the dental field.

Leukoplakia, a chronic disorder of the mucous membrane of the tongue or mouth, or oral cavity, is characterized by oval, rounded or irregularly shaped, indurate, whitish patches which sometimes exhibit a tendency to form fissures and which may in time become carcinomatous. Bloodgood, in a series of 160 cases of cancer of the mouth, found leukoplakia in 25% of their number. Mantilla, in studying 566 cases of leukoplakia, found that in 32% of the cases cancer had resulted. The cause of leukoplakia, in my opinion, is one of three conditions: syphilis, chronic irritation, a combination of the two, or it may appear without any known cause. It is found more frequently in males than in females, and n adults more often than in children—the reason being irritation from the use of tobacco. This irritation may also result from ill-fitting dental appliances, ragged teeth, etc. Leukoplakia that occurs without any discernible cause usually occurs in women past forty years of age.

Fordyce's disease is a chronic disorder of lips and inner surfaces of the cheeks, characterized by the appearance of discrete, yellowish, milium-like lesions on the affected surfaces. The disease is probably due to the presence of aberrant sebaceous glands in the buccal mucosa. The disorder is a harmless one, but is very stubborn to all forms of treatment.

Retention cysts of the mucous membrane of the lip vary in size from that of a pinhead to that of a small hazelnut. The common location is the lower lip; they are usually of traumatic origin. When incised, a whitish, glairy fluid escapes.

Were it not for the fact that so many lesions in the mouth are likely to become malignant when neglected, the care and diagnosis of these lesions would not be of such vital importance. Carcinoma of the tongue, if diagnosed early, treated at once, the mouth put in good hygienic condition, and all irritation removed, has an entirely different outlook from that in a neglected case where the irritation is allowed to go on unchecked. Dr. Ewing, in a recent issue of *Campaign Notes* of the American Society for the Control of Cancer, has this to say in regard to cancer: "I believe that the time has come when the public should be informed of the most efficient methods of treating curable cancer, and of the progress which is being made in the field of therapeutics." This, if it applies to cancer in any part of the body, certainly applies to cancer of the mouth. Some years ago, in an article entitled "What the Family Physician Should Know About Cancer," I advanced the same theory. It was met with some unfavorable comment. This statement, coming from a man who is so prominent in cancer work, as well as from other men with similar reputations, is worthy of much thought and consideration. If the idea is really feasible, it should be extended to the dental profession as well as the lay public.

Carcinoma of the tongue is one of the most difficult types of malignant disease with which we have to deal. The clinical course varies extensively, and as a rule the growth is rapid and dissemination is early. The rich vascular and lymphatic supply and the constant movement of the organ is probably the cause for this rapid dissemination. With the changes that occur in the cancer cell in the increasing of the growth there goes hand in hand, in many cases at least, an increased sensitiveness to physical or chemical damage, due to altered metabolism of the cancer cell. Accordingly, the cancer cell is more easily influenced than the cells of the normal tissue. This important fact was realized when it was discovered in the treatment of cancer with radium and x-ray, that certain growths were much more radiosensitive than others. This fact is often overlooked, and for this reason we often obtain a miraculous result with radium when least expected. Statistics show that carcinoma of the tongue terminates fatally in from 75% to 90% of the cases. The average duration of life in untreated cases is less than two years. The lesion may be located on the tip of the tongue, at the base, or may even begin in the center of the organ. Some of the clinical diagnostic points of carcinoma of the tongue are: the presence of an abnormal growth, the amount of infiltration, raised hard borders with an ulcerated center; pain may or may not be present. When secondary glandular involvement, with pain and a foul, discharging ulcer of the tongue, is present, with hard raised borders, it is usually too late to hope for a cure under any form of treatment. The differential diagnosis is at times most difficult and the laboratory and other known tests available must at times be utilized make the diagnosis definite. I do not believe in a routine biopsy of all suspected cases of carcinoma of the tongue.

Cancer of the mucous membrane may be primary or it may be secondary to some previous condition, such as leukoplakia. Cancer, when associated with

lues, is a much more malignant condition; particularly is this true if the patient has a persistent positive Wassermann in spite of anti-specific treatment.

Billroth was the first to advance the theory that cancer of the oral cavity, in most cases, occurs in soil which has been prepared for the development of the growth by epithelial abnormalities due to syphilis. It has been estimated that, among those patients having cancer of the tongue, more than 60% are syphilitic.

The clinical diagnosis of carcinoma of the mucous membrane, when found on the lip, is, as a rule, not at all difficult. When involving the buccal mucous membrane, it is perhaps a more arduous task, and on the tongue is most difficult of all. The fact that it is not always considered advisable to make a biopsy when malignancy is suspected in a vascular organ, such as the tongue, makes the diagnosis all the more difficult. Dr. John E. Lane has brought out the fact that in some cases, especially if a large section can not be obtained for microscopic examination, the clinical diagnosis is more likely to be correct than the microscopical. Some of the points to be considered are the age of the patient and the location of the lesion, particularly one that is adjacent to a rough or ragged tooth, etc. Cancer of the mouth usually occurs in men between forty and sixty years of age, and about 75% occurs in persons who are constant smokers, in whose mouths evidences of bad dental hygiene will usually be found.

Epulis is a fibrous tumor of the gums, usually situated on the periosteum or the bone of the jaw.

Papilloma of the oral cavity is one of the most common, simple, warty growths found in this locality. It is usually located in the dorsum of the tongue, but may be found on other parts of the mouth, such as the inner surfaces of the lips, cheeks, etc., and may be simple or multiple.

Of course, the conditions which are a part of a constitutional disease, or a generalized skin eruption, and secondary infections will not be considered at this time.

Black tongue, hairy tongue, or lingua nigra, according to Heidingsfeld, may be divided into two classes—the true ideopathic, characterized by well-defined, stable, black-brown, thick, soft, fur-like filaments; and the pseudo or spurious cases, characterized by thickish, yellowish-brown or greenish discolorations of unstable, evanescent character, covered with a soft, mushy detritus, occasionally containing short filaments.

Glossitis rhombica mediana is a very rare condition, described by Sutton as being invariably located in the middle third of the dorsum, immediately in front of the lingual V formed by the circumvallate papillæ. The surface of the lesion is smooth, shiny, and reddish or red, interspersed with opalescent spots of beginning sclerosis, and usually there are several distinct papules of a yellowish tinge in it. The disorder is usually discovered by accident, and is of long duration.

Moeller's glossitis is a chronic, superficial excoriation of the tongue. In this affection the tongue is covered with sharply defined, intensely red spots, the epithelium having become desquamated. The chief complaint is persistent burning, and at times a shooting pain. It is further irritated by highly seasoned or acid foods, and cold foods are more irritating than hot foods.

Cheilitis glandularis is a chronic affection of the lips, characterized by swelling, hypertrophy of the mucous glands, and enlargement of the ducts. In a few instances abscesses develop, but this is rare. An overdevelopment of adenoid tissue and tonsils often are associated with this disease, which is fairly common.

Cheilitis exfoliativa, according to Sutton, is a condition characterized by a chronic inflammatory process which involves the border of one or both lips, with the formation of slight, dry, adherent scales and crusts. Very little thickening occurs; adjacent skin is occasionally involved.

La perlèche is a condition characterized by thickening and maceration of the mucous membrane. The lesions are most marked along the border of the lip, and extend onto the skin surface. They are very rarely found in the center of the lips, usually being located at the angle of the mouth. There is a wrinkling of the surface, with slight fissures which seldom bleed. There is no adjacent inflammation and no glandular involvement. Children are more frequently affected than adults.

Blastomycosis, actinomycosis, and sporotrichosis are all of parasitic origin, and, while the mucous membrane may be affected, it is only part of the more or less generalized skin infection; therefore, we shall not discuss these diseases in detail.

Filiform verruca is a form of verruca which appears in the mouth as well as on the parts of the body. It is a thread-like growth, varying from one-eighth to one-fourth inch in length.

Treatment.—The treatment of lesions originating in the mucous membrane of the mouth is at

times one of the most difficult problems in the entire field of medicine. It is just as important to know what *not* to do as to know what must be done. In other words, a condition of the mouth that has been improperly treated is harder to cure than one that has not received any treatment. It is a regrettable fact that most patients with malignant growths in the mouth do not consult a physician until the condition is markedly advanced and is giving considerable trouble. It is also to be regretted that the physician himself, in some cases, is to blame, for, in not giving the patient proper advice, in giving indefinite answers, and in having a tendency to keep the patient from worrying about his condition, he is leading the patient to be neglectful. First of all, a careful diagnosis as outlined above should be made of the condition and then careful consideration should be given to the affection before any treatment is started. In all cases a definite plan should be decided upon first and then carefully adhered to throughout the course of the disease. In other words, the one who is going to treat the disease should be familiar with the subject and know what he intends to accomplish, or the case should be referred to some one who is especially equipped and familiar with such cases. In all ulcerated conditions of the mouth, the cause of the same, if possible, should be discovered and, if at all possible, should be removed. This alone may cause the ulceration to disappear. For instance, an ulcer from an ill-fitted dental plate or jagged tooth may disappear on removal of the cause. The mouth should be put in perfect hygienic condition, and in nine out of ten cases it will be found necessary to refer to a competent dentist before instituting any form of treatment. Many conditions are better left alone unless they can be treated properly. For instance, a superficial leukoplakia will, in a great many cases, disappear if smoking is discontinued and the mouth put in a proper hygienic condition. It may be necessary to give a simple alkaline mouthwash in addition. When a definite diagnosis is made, such as syphilitical leukoplakia, specific treatment, of course, should be instituted.

The treatment for any ulcerative condition in the oral cavity consists of putting the mouth in the most hygienic condition possible. This may necessitate an x-ray picture of the teeth, examination of nasal and accessory sinuses, with or without the use of x-ray, and the help of a competent dentist. I can not emphasize too strongly the fact that all rough or jagged teeth, irregular plates or bridgework, or any other form of irritation must be removed.

Some years ago a lady, age 60, came to me with an ulcer along the right lateral surface of the tongue and the floor of the mouth. The borders of this ulcer were raised, felt hard, and the condition looked exactly like a beginning epithelioma. The patient was put on a simple alkaline mouthwash. I was asked to not tell the lady the nature of her condition. I explained to her son that I thought it advisable to implant radium seed in the growth which I diagnosed as a beginning epithelioma. The patient was wearing a lower dental plate, and I sent her to her dentist with the request that he examine the plate and remove any roughness which might cause irritation. He telephoned me, saying there was no roughness, but that he smoothed the plate on general principles. The radium seeds were ordered, but for some unexplainable reason they did not arrive on the day they were to have been implanted. Upon examination, to our surprise, the condition was found much improved. After another ten days, without any treatment, the ulcer was completely healed, and has remained so, the case having been under observation for one year. It is quite evident that the irritation from the plate was the specific cause of the ulcer. It is also quite evident that, had this irritation continued, a definite epithelioma would have developed. All ulcerations due to irritation, however, do not disappear so soon after the removal of the cause, stimulative treatment often being necessary.

The use of tobacco in all forms should be discontinued immediately upon discovery of any ulceration of the mouth. No matter what the cause of the ulceration is, the continued use of tobacco will make it worse, and in some cases will absolutely prevent healing.

Some recurrent ulcers may be due to faulty diet, and this, of course, must be corrected. Proper elimination is also a great factor in the treatment of all ulcers, regardless of cause.

The best treatment for canker sores is a good cathartic and a restricted or light diet.

There is also a form of ulcer which occurs sometimes in those not able to obtain fresh vegetables, as those on board ship, that is very persistent, rather large, and very painful. I have seen this condition last three or four weeks when I was a ship surgeon some years ago. Treatment for this condition is a change of diet, a good cathartic, touching the ulcers

with nitrate of silver, and frequent use of any alkaline mouth wash.

The organisms of Vincent's angina are perhaps best antagonized by means of oxidizing agents, such as solution of hydrogen peroxide (diluted with an equal amount of water), postassium permanganate (1:5,000), or sodium perborate. The latter may be used in a two per cent solution as a mouthwash and gargle, as well as in the form of thick paste, applied, preferably by the physician, to the ulcers and retained there for four or five minutes while the oxidizing froth develops. The mouth should then be rinsed with warm water. Cauterization with ten per cent chromic acid, fifty per cent trichloracetic acid, or strong silver nitrate solution may be employed for resistant areas. The application of powdered arsphenamine to the affected area is of help, as well as sulpharsphenamine intramuscularly, which is better than arsphenamine intramuscularly.

Pyorrea is a dental condition and is treated exclusively by dentists, and for that reason it is unnecessary to discuss the treatment.

The treatment for leukoplakia may be divided into two forms—the syphilitic and the non-syphilitic. The syphilitic form should, of course, receive specific treatment, and in addition it is quite often necessary that local treatment be instituted before the lesion will disappear. The condition, if of wide extent and long duration, is in many cases practically incurable. Leukoplakia, in itself, is not a serious disease; but its likelihood of becoming an epithelioma is why the proper handling of such a case is so important. I sometimes feel that each case should be treated individually, and no set rules laid down. Certainly an extensive involvement of the mucous membrane of the tongue and mouth, which is not associated with syphilis, should not receive any heroic treatment unless some distinct part of the lesions shows signs of becoming an epithelioma. In a mild,non-syphilitic case, simple diet, avoidance of gastrointestinal disturbances, free elimination, perfect oral hygiene, refraining from the use of tobacco in all forms, and the use of an alkaline mouthwash is all that is necessary. In one case, in a lady past forty-five years of age, with no history of lues and with a negative Wassermann, I felt that protiodide of mercury in one-fourth-grain doses was of distinct benefit. This case was very extensive, involving the mucous membrane of the mouth and tongue. It disappeared entirely after four months of treatment, and the cure has remained for over three years. I have tried the protiodide of mercury in other cases, and, while I believe it is of distinct benefit, I do not feel that it is a specific in leukoplakia. The x-ray has been advised in the past for the treatment of localized patches of leukoplakia, but the results were so poor and the difficulty of proper application was so great that this form of treatment has been discontinued. Realizing that areas of leukoplakia which show signs of undergoing a change, such as thickening or cracking of the surface of the patch, or overgrowth of tissue, are very likely to become epitheliomatous, they should, as soon as it occurs, be treated with radium as a beginning epithelioma. I know of no lesion of the mouth which requires more skillful treatment, to obtain a satisfactory result, than leucoplakia. If it is overtreated the lesion will not heal and certainly will become a true epithelioma. If insufficient treatment is given the same result occurs —the patch does not heal, but becomes worse. The radium dosage for leukoplakia, in my opinion, is just a little less than would be given for epithelioma of the mucous membrane. Some advise heavy-filtered *gamma* radiation, but I personally believe that some of the *beta* rays are also necessary. In my opinion the treatment is the combination of the hard *gamma* rays with, say, one-half hour with a non-filtered plaque. The small patches, difficult of access, can also be treated with the galvanocautery or electrodesiccation.

In a recent article entitled "Cancer Supervention in Skin Diseases," by Drs. J. J. Eller and N. P. Anderson, published in the *Journal of the American Medical Association*, February 8, 1930, this statement is made: "We mention the following therapeutic agents only to condemn them: radium, röntgen rays, carbon dioxide snow, chemical caustics of all kinds, and electrolysis." While I can agree with their view on carbon dioxide snow and chemical caustic, and my experience with röntgen rays for this condition will not permit my making a statement as to their value, I can not accept this view on radium, as I have treated numerous cases of leukoplakia with radium, and, while my results have not been perfect, still radium compares favorably with any other method used, and surely has been as satisfactory as electrocoagulation and electrodesiccation, which I also use daily in my office. I have one case of leukoplakia of the tongue in a physician, whom I treated with radium, that is a typical example of the satisfactory results that can be obtained by this method. I am perfectly convinced that, were it not for radium, a great number of my cases of leukoplakia would have died of cancer of the mouth

long before now. Whether my favorable results are due to a particular form of technique I am unable to state.

The treatment of Fordyce's disease is either with radium, carbon dioxide snow, or the curette.

Retention cysts of the lip should be removed surgically, care being taken that the entire sac is removed. Cautery and diathermy have also been advised, but I have never found them necessary in this simple condition.

The treatment of epithelioma of the mucous membrane of the mouth resolves itself into three distinct methods: radium, surgery, and cautery, or surgical diathermy. Radium, as a general rule, is the treatment of choice. Surgery may be indicated in some particular cases. Cautery or diathermy may be used alone, or in combination with radium or surgery. When radium is used, it may be in the form of surface applications of radium, radon implans (either gold or glass), or radium needles. Some of the men doing considerable of this work in the east have given up all forms of treatment except the heavy filtered distance application of radium. Such a treatment, of course, requires quite a large amount of radium, and the duration of the treatment is days and weeks. The adjacent glands should be irradiated either with radium or x-ray, whether or not they are involved.

Several points should be emphasized in the treatment of epithelioma of the lip. First, the lesion should be treated as a deep-seated carcinoma, using a large amount of heavily filtered radium. Needles or radon seeds should be used last rather than first. The cervical glands should be irradiated early; and I, personally, prefer heavily filtered radium pads, which are allowed to remain in place from ten to fourteen hours at each treatment.

A lesion of the tongue or mucous membrane in a patient who has a positive Wassermann does not exclude the fact that it may also be a beginning epithelioma, and should not be treated indefinitely with antiluetic treatment only. It must be borne in mind that arsenic is capable of causing an epithelioma when taken internally. For this reason it is not considered advisable to give arsphenamine in these cases, since an old syphilitic lesion thus treated may rapidly undergo a change and become a true epithelioma. Such patients should be treated with bismuth, mercury, and potassium iodide. Clear and concise diagnosis and treatment in the beginning of this condition mean everything to the patient. In all probability, allowing the condition to drag on indefinitely will mean a fatal termination.

The treatment for epulis is radium, surgical diathermy, or cautery.

Papilloma can be removed best with diathermy.

Carcinoma of the tongue, I believe, should be treated with radium. Whether this treatment would be with radium seed (radon, either glass or gold), imbedding of radium needles, local application of filtered radium, or distant application, or a combination, would depend upon the case under treatment. The cervical lymphatics should, of course, receive radiation, either deep x-ray or heavily filtered applications of radium.

The local conditions that are part of a generalized skin condition, of course, must receive treatment appropriate to the skin condition of which they are a part.

Secondary infection from tonsils, sinuses, etc., should receive treatment by a competent specialist in this line of work.

Furrowed tongue and acid-mouth should be treated by simple oral hygiene, as mentioned above.

In black tongue and Moeller's glossitis, the treatment is very unsatisfactory, carbon dioxide snow having been suggested as of benefit in the former, and, in the latter, x-ray or radium.

Cheilitis glandularis can be treated with either radium or x-ray, and also by using a small curette on the individual lesions.

Glossitis rhombica mediana can best be treated with the x-ray. The treatment for chronic glossitis, by which I mean a chronic generalized inflammation of the tongue, is most difficult, and the relief of the distressing symptoms is not easy. There is no specific treatment for all cases. If there are any etiological factors such as infections within the mouth, they should be immediately removed. Glossitis associated with gastrointestinal disorder, pernicious anemia, etc., should receive appropriate treatment. Tobacco, spicy foods, and extremely hot or cold food should be avoided. A very mild alkaline mouthwash should be used after each meal. Tincture of nux vomica, or dilute hydrochloric acid if taken through a glass tube, may be of some benefit in a chronic glossitis due to a gastrointestinal disturbance. Radium or x-ray exposures may be helpful.

Cheilitis exfoliativa may be treated with carbon dioxide snow, x-ray, and radium; but I have found radium to be of superior benefit.

La perlèche is a very rare disease which I have

never treated; but a ten per cent silver nitrate or a five per cent chromic acid treatment has been recommended.

Blastomycosis, actinomycosis, and sporotrichosis can be treated with radium and x-ray, and with iodides internally.

The best (and what I consider the only) treatment for filiform verrucæ is surgical diathermy.

In the treatment of traumatic ulcers, the first factor is removal of the cause. This may require the help of a number of specialists, such as a dentist, a dermatologist, or a röntgenologist. Since removal of the cause is the most important factor, the search should be kept up diligently, and every effort exhausted before one decides that the ulcer is of ideopathic origin. After this, a simple mouthwash may be all that is necessary to complete the healing of the ulcer. Two or three applications of a two per cent silver nitrate solution may be used if you feel that stimulative treatment is required. Such stimulation, however, should not be kept up indefinitely. If the ulcer is sluggish and of long duration, showing signs of becoming an epithelioma, radium treatment should be instituted at once.

Syphilitic lesions should, of course, receive antisyphilitic treatment.

In closing, I wish to emphasize the important factors in handling the diseases originating in the mucous membrane of the mouth:

1. Early diagnosis.
2. Find the cause of the trouble, and remove it, if possible.
3. Perfect oral hygiene.
4. Remove all local irritation.
5. All forms of treatment should cause as little destruction and irritation as possible.
6. Treatment should, if possible, consist of one application rather than a series of applications.

RUPTURE OF THE RECTUM *

Survey of the Literature and Report of Case

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Rupture of the rectum, other than as the result of direct injury, is an exceedingly rare condition. According to Henningsen,[1] only fourteen cases were recorded up to 1917. The rupture may follow a blow on the abdomen or occur from severe straining, or from lifting a very heavy object, or, in women, during too forcible labor. There may or may not be a preëxisting weakness in the wall of the rectum. Since rupture of the rectum is so very rare, I have reviewed the literature on the subject before describing my own case.

Moulton,[2] in 1901, reported a case of rupture of the rectum and protrusion of the intestines in an insane man who had acquired the ability to produce rectal prolapse and inversion at will. One day the attendant found him with a loop of small intestines and mesentery two feet long hanging from the anus. There was a rupture in the wall of the rectum through which the small intestine protruded. The patient died in thirty-six hours from shock.

Sauerbruch,[3] in 1903, reported a case in a farm laborer, who was apparently struck in the abdomen by a cow's horn in such a way as a push the intestine upward and tear the rectum was the limit of its elasticity was exceeded. He suffered immediately from abdominal pain and vomiting and was brought to the hospital in collapse. At operation there was much free blood in the abdominal cavity and an oblique tear about 1½ inches long was found in the anterior wall of the rectum. From his experiments on cadavers, Sauerbruch believes that, to tear the intestine, the direction of the blow must be from below upward and to one side of the median line so that the movable portion of the gut is pushed away from the immovable part until the limit of elasticity of some portion of the intestinal wall is exceeded.

Heincke,[4] in 1906, reported a case in a healthy man, aged 30, in which there was no history of abdominal injury. After lifting an unusually heavy object, the patient had a sudden attack of abdominal pain. Examination showed rupture of the rectum near the sigmoid flexure, several centimeters above the peritoneal fold. According to Heincke, there was a preëxisting prolapse of the rectum or some other abnormal condition in most of the earlier cases of rupture of the rectum reported. He believes that the rupture is due to a sudden increase of intra-abdominal pressure.

Müller,[5] in 1907, reported a case in a man who, after lifting a heavy bundle of straw, had a sudden attack of abdominal pain which necessitated his lying down. By the sixth day the patient was in collapse and his abdomen was distended. Necropsy showed an irregular tear in the rectum about three inches long, located about seven inches above the anus. At the site of the rupture there was also a false diverticulum, in which the muscular layer of the gut

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was lacking. Apparently, rupture took place at the site of the diverticulum as a result of the increased intraäbdominal pressure incidental to the lifting.

Franklin,[6] in 1908, cited the case of a boy, aged 17, who was crushed between the "roller beam and mule" in a cotton mill. The patient suffered from extreme shock and hemorrhage and died two hours after admission to the hospital. At necropsy a large quantity of blood was found in the pelvic peritoneal cavity, and there was a vertical tear about three-fourths of an inch long on the anterior surface of the rectum, located 3½ inches from the anus.

Burkhardt,[7] in 1908, reported a case in a boy, aged 17, who suffered a sudden attack of abdominal pain and faintness and passed blood while straining at stool. The pain became increasingly severe and the patient was admitted to the hospital on the following day in a state of collapse. At operation a beginning peritonitis was found and there was a tear not quite an inch long on the anterior wall of the rectum, just above the peritoneal fold. The tear was closed and temporary artificial anus in the iliac fossa established. Later this artificial opening was closed and the patient made a good recovery.

Henningsen,[1] in 1917, recorded two cases of rupture of the rectum. The first patient was a man, aged 57, who was suddenly seized with severe pain in the lower abdomen. The findings on examination suggested cancer of the rectum, but this condition was not found at necropsy. When laparotomy was performed a few days after the onset of the illness, there was diffuse peritonitis originating from a perforation at the junction of the sigmoid flexure and rectum. The patient died five days after operation, and nothing abnormal was found in the rectum other than the tear. Henningsen's second patient was a man, aged 59, who suddenly became ill after a difficult stool, occurring several hours after eating sauerkraut. The abdomen was hard and distended, but rectal examination showed nothing abnormal. When laparotomy was performed, there were pus in the peritoneal cavity and fibrin deposits on the intestines. A perforation not quite one inch long was found in the longitudinal axis of the rectum. It was sutured, but the signs of peritonitis progressed and death occurred in one week. There were no lesions in the rectum other than the rupture.

Dorsett,[8] in 1920, cited a case occurring in a woman, aged 37, during labor. The patient complained of severe pain in the left side and showed signs of shock. The abdomen was so greatly distended that the skin was broken in several places. On vaginal examination, a soft, boggy, puerperal uterus, bilateral laceration of the cervix, and laceration of the perineum were found. At necropsy, rupture of the rectum at the rectosigmoidal junction was discovered.

Noome,[9] in 1921, reported a case occurring in labor in a woman aged 43. During delivery, by means of axis traction forceps, he was surprised to see omentum protruding from the rectum. Upon consultation it was decided that some intraperitoneal lesion was present. The patient died of septic peritonitis sixty hours later. No post-mortem examination was made.

Hellstrom,[10] in 1921, recorded a case of rupture of the rectum with diffuse peritonitis in a boy, aged 17, who experienced pain and bleeding at defecation. In another case a man, aged 63, who was awakened in the night with unbearable pain in the rectum, gave no history of injury. At operation ten hours later a rupture with smooth edges, but with no evidence of bleeding, was discovered.

Spencer,[11] in 1922, reported a case of rupture of the rectum into the peritoneal cavity in the case of a man who stepped against the end of the handle of a wheelbarrow. An antiseptic dressing was applied and the patient sent home. He died later of septic peritonitis, operation failing to save his life. In another case in a boy, aged 7, rupture of the anterior wall of the rectum occurred when the patient fell against the leg of a chair. There was no external signs of the accident, but there was a rent in the rectum situated on the anterior wall just above the internal sphincter. The margins were ragged and infiltrated by blood. Recovery followed closure of the rent.

Finnegan,[12] in 1923, recorded a case of pneumatic rupture of the rectum in a man, aged 42, who worked in a snagging room of a foundry, where the men dusted off one another by means of a hose with an air pressure of 70 to 80 pounds to the cubic inch. While the patient was being dusted off he suddenly jumped into the air and complained of pain in the rectum. About an hour later he suffered from slight cough, dyspnea, and cyanosis. The swelling was soft and showed marked crepitus, extending from the angles of the jaw to the toes. While a tear in the rectum was suspected, there was no indication for laparotomy. Anatomically, the air must have reached the subcutaneous tissues through a tear in the rectum below the point where the peritoneum was reflected. The patient returned to work in about five weeks.

Brumbaugh,[13] in 1924, stated that a number of cases of rupture of the rectum have resulted from the application of compressed air blasts to the anus, and that cases of more or less extensive lacerations of the rectum from a fall on pointed objects are occasionally encountered. His case occurred in a woman, aged 41, who went to an osteopath for the treatment of constipation by abdominal massage. After a full-length sigmoidoscope was passed, she suffered agonizing pain and fainted. Later, she was nauseated and vomited. The next day she was admitted to the hospital, and suffered from shock, distention, and pain and tenderness in the abdomen. Pus and blood escaped from the anus. Five days later a diagnosis of recto-uterine fistula with right-sided salpingitis was made. The patient was discharged from the hospital about five weeks from the time of the accident. Brumbaugh believes that the greatest interest in this case lies in the rapid spontaneous closure of the recto-uterine fistula.

Report of Author's Case.—A laborer, aged 54, experienced sudden, intense pain in the lower abdomen while lifting a set of hammer dies onto a truck. When he arrived home he passed a considerable amount of blood with his stool, which was hard and fairly dry. As the pain was so severe as to be almost unendurable, a physician was summoned, who gave him a hypodermic of morphia. The following morning the patient was admitted to the Mountain State Hospital for treatment, and I was called for consultation.

The patient was found to be in deep shock, apparently suffering severe abdominal pain. The abdominal wall was tender and of boardlike rigidity. Temperature was 98.6°, pulse 88. The diagnosis of ruptured abdominal viscus was made.

An exploratory incision was made. When the peritoneal cavity was opened there was a free expulsion of gas. The abdomen was found full of chylous material. The large intestine was traced and appeared normal until the rectum was reached, where an opening about one-half inch in length was found. The rectum showed no ulceration and was not injured, except for the tear.

The opening in the rectum was closed. The abdominal cavity was cleansed and drained. The abdomen was closed in the usual manner, after which the patient was returned to his room and given saline solution. The patient died four days later from general peritonitis.

Summary.—Rupture of the rectum, other than as a result of direct injury, is an exceedingly rare condition—only fourteen cases being recorded up to 1917. The accident usually results from some sudden increase in intraäbdominal pressure, as when lifting a heavy weight or straining at stool, or during labor. A blow upward on the abdominal wall and to one side of the median line may cause it. Sudden abdominal pain and nausea, the passage of blood from the rectum, and the later development of peritonitis are the ordinary clinical manifestations. Untreated, the usual outcome is death from peritonitis; but, in exceptional instances, spontaneous healing may take place. When the diagnosis is made in time, the rent should be repaired and the peritoneal involvement treated.

In the case reported, a laborer, aged 54, suffered sudden, intense abdominal pain while lifting a heavy weight onto a truck. He passed blood in the stool and the abdominal wall became extremely rigid. At operation, a tear about one-half inch long was found in the rectum. The opening was closed and the abdominal cavity cleansed and drained. Four days later the patient died from peritonitis.

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FOCAL INFECTION, WITH ILLUSTRATIVE CASES *

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The topic which I am about to discuss is a review of observations and treatments over a period of nearly twenty years of private general practice with all classes of people.

There can no longer be any question about the rôle of focal infections in the production of systemic disease or disorders of function. However, I will admit that the medical fraternity goes off "half-cocked" at times and becomes too much enthused, even to the point of making statements which can not be proven either in the laboratories or at autopsy. Furthermore, you will appreciate the fact that medicine is not an exact science. Bedside observation and clinical results of treatments instituted often surpass laboratory diagnosis, and treatments instituted excel those prompted purely by laboratory findings. The mere fact that the removal of infected organs, thereby eliminating the site of a focal infection, results in no improvement in the systemic disease or disorder does not in any way invalidate the doctrine of focal infection. It only stresses the need of proper diagnosis and treatment of such cases if we are to cure or benefit our patients. Further, you will agree with me that it has become customary in the past few years, due to newspaper propaganda, probably well-meaning health units, and uninsulated physicians, if a man gets a pain, to pull out or cut out everything which could be viewed with the slightest suspicion as to a causative factor. I have personally known of or seen many innocent tonsils enucleated, teeth extracted, mutilating sinus operations, gallbladders remoevd, and so forth—all of this mutilation done with the idea of cure by the removal of a supposed focus of infection. There is another point which I wish to stress, and that is "unpreparedness in the specialties," and especially do I mean the specialty in the eye, ear, nose and throat. I can not conceive how a man can specialize when he can not generalize. The specialties, particularly those in the fields mentioned above, should have big, broad, level-headed, well-insulated men of medicine who have had wide experience in general medicine. I personally know of a case where a young, inexperienced specialist on eye, ear, nose and throat fitted up a colored girl with glasses for toxic adenoma of the thyroid gland, and, according to her statement, told her that it would cure her exophthalmos and accompanying nervousness.

Making due allowance for perverted enthusiasm, the fanatics, and the errors of judgment, the present status of opinion and matured experience may be summed up as follows:

(*a*) A focus of infection in any part of the body may (and very often does) give rise to changes pathological or expression of functional disorders often quite remote from the site of infection.

(*b*) The primary focus of infection is usually small, such as an infected tonsil or infection at the root of a tooth. Large areas of infection have a tendency to produce drainage.

(*c*) The focus is usually walled off by natural resistance of the tissues by lymphocytes. However, this protection is usually not sufficient to prevent the escape of some of the infection, it being absorbed by the blood stream.

(*d*) The focus of infection is usually small, as stated above, and the severity of infection is so reduced that the same does not cause a breakdown of the tissues involved.

(*e*) A focus of infection in any organ of the body may be just as mythical in its systemic manifestations or as protean as an infection by the spirocheta of syphilis.

(*f*) Chronic diseases—in fact, the majority which are slow in their development, have their origin in a focus of infection in some organ of the body. It may be possible or impossible to locate this infection.

Any organ or portion of the body where germs and their products accumulate and incubate may become a focus of infection and pour their poisons into the blood stream. The most common sites are the tonsils, teeth, nose, sinuses, gallbladder, colon, prostate, and the rectum. Dr. Rosenow states that the focus depends upon two factors: First, "the elective pathogenic tissue affinity," which means the specific action of the microörganisms upon the tissue comprising the primary focus; and, second, added trauma, strain, or exposure of the tissue or organ constituting the site of infection. Dr. Rosenow includes, under this second heading, exposure, trauma, and fatigue of certain structures. He also stresses heredity, lack of sunshine, alcoholism, and other excesses as causing lack of resistance of the tissues, thus greatly increasing the likelihood of elective localization of bacteria.

Almost any pus-producing organism may be concerned in the primary infection. Those which have

* Read before the Fayette County Medical Society at Oak Hill, West Virginia, March, 1929.

been most frequently isolated are the several varieties of streptococci, staphylococci, and the pneumococci. The streptococci are the most common offenders. Staphylococci are very frequently found on the surface of the tonsils and in caries and apical infection of teeth. However, it is unusual to find the staphylococcus alone; it is usually associated with the streptococcus. There is little to be gained by the elaborate classification of the various organisms, as clinical observation plus reaction with the patient's blood provides the only reliable proof.

Just how the primary infection finds its way to the more remote parts of the body has never been definitely determined, and it would seem that it is not so much the bacteria themselves as the toxins or bacterial products which give rise to secondary manifestations. The bacteria of the secondary lesion are quite often different from those of the primary focus. In the foci of the tonsils and teeth, as previously stated, the streptococcus is the almost invariable offender; whereas, in the pathology of the gastrointestinal tract and genitourinary organs resulting from such focal infection, the colon bacillus is the dominant organism. This will readily carry out Rosenow's doctrine of elective tissue affinity. The theory of this is that the streptococcus, or, more likely, its toxin, invades the remoter part, which is previously weakened by low resistance, producing pathological changes which in turn render the part susceptible to the attack of its own elective microorganisms, the colon bacilli. From the above, it is reasonable to conclude that the primary focus of infection is usually in the exposed cavities of the body, and that internal foci are secondary to one or the other. It is certain that any secondary lesion, as in the gallbladder or the prostate, may itself become a primary focus for the rest of the body.

The Tonsils.—The tonsils are probably the most frequent sites of focal infection, and have been definitely shown to be guilty of the production of systemic disease. In fact, it was the absolute demonstration of the connection between diseased tonsils by infection and systemic disease that led to the doctrine of focal infection. Furthermore, it has been shown that living organisms can not pass through the crypts into the substance of the tonsils if the lining epithelium is intact. A colony of bacteria in the tonsillar crypt will probably do no harm if the drainage of the crypt is good and there is no ulceration. We know that the tonsillar crypts are not readily drained, especially if there is fibrosis. It has been experimentally proven that chemical substances can be absorbed from tonsillar crypts; why not toxins?

To incriminate the tonsil as defendant in the suit, Focal Infection *vs.* Systemic Disease, is not always easy. Just a look with a spoon handle by light of a kitchen window is not enough to convict. A blood count may establish whether it is infective or not, but this is not always the case. If there is a chronic infection the blood picture will show either a lymphocytosis or a leucopenia; however, this is not conclusive evidence by any means. The big error is the large, inflamed, and obviously diseased tonsil. It is now known that the small, submerged (*ingrown*, if you please) tonsil is the one capable of producing the greatest number of chronic foci of infection. We have all seen the enlarged, acutely inflamed tonsil, accompanied by acute systemic manifestations, constitute its part of the systemic infection. The small, fibrous tonsil, whose surface appearance gives no clue to the focus of infection buried beneath its surface, is the tonsil which produces the insidious chronic disorders. Always, before I render an opinion as to tonsillar infection, I get an accurate history, inspect the faucial pillars for signs of inflammation, retract the tonsil pillars and inspect the tonsils as to size, color, and by compression determine the presence or absence of purulent material within the tonsil crypts. Palpation will reveal whether the tonsil is tender, hard, soft, and whether attached by adhesions to the pharyngeal wall. Finally, the condition of the submaxillary and inferior parotid glands should be ascertained. After all of these points have been covered an intelligent opinion can be ventured as to the presence or absence of focal infection.

There is no treatment of merit for diseased tonsils other than surgical removal, and, once the tonsil is convicted, it is my policy to remove at once, and this by clean dissection of the tonsil with its capsule. It is absolute folly to remove a tonsil and leave its infected capsule.

CASE I.—Male, white, age 30 years, married; occupation, butcher. Past and family history negative. Present history: Frequent attacks of tonsillitis, sore throat all the time. Patient seen at my office, where acute peritonsillar abscess was diagnosed. Patient was ordered to bed and the usual remedies applied. The abscess was incised the next morning, with free drainage of pus. Recovery was prompt, and the patient returned to his work within four or five days. After a lapse of about eight weeks he was forced to discontinue his occupation on account of

pains in the feet and legs. His condition was diagnosed by another physician as "flat feet" and surgical arch supports were recommended and obtained. There was no benefit from the supports, and the patient came limping into my office and told me that the only way he could use the supports was to take a whole box of aspirin. I gave him a very careful examination, including a Wassermann test, which was negative, and told him that I was of the opinion that his trouble was rheumatic and was most likely caused by infection of his tonsils. A clean tonsil enucleation cured this man in three weeks, and at present he has no sign or symptom of rheumatism. I might say, in passing, that during my entire practice I have never seen a case of peritonsillar abscess which was not later followed by a rheumatic manifestation.

The Teeth.—The teeth are most likely second in importance as a source of systemic focal infection. This discovery was first made by Dr. William Hunter, of England, in 1910, who proved that patients suffering from obscure systemic disease rapidly improved when infected teeth were extracted. His proof seems to be entirely clinical. Dr. Rosenow later took up the work and demonstrated the same clinically and experimentally. At the present time there is considerable discussion, especially among the dental profession, relative to infected teeth; but the question is finally resolved to the diagnosis of dental infection and to what is to be done about it after the condition is diagnosed. The diagnosis is not at all times easy, and only after a careful history, inspection, palpation, x-ray, etc., is it possible to arrive at a correct diagnosis. I am of the opinion that one of the greatest mistakes is too much dependence on the x-ray film, and this is due to the fact that the diagnostician does not use his natural facilities, and depends solely upon his interpretation of the film, when he does not know what he sees when he examines it. It is, indeed, a serious matter for a patient to have his teeth extracted, for it means a loss of functional efficiency. However, I am thoroughly convinced that a tooth with apical infection should be removed in the adult patient. When it comes to the extraction of teeth in children, however, there is a distinct argument to the contrary, and physicians should be cautious in advising removal.

CASE II.—Male, age 69, married, farmer; habits good; does not use tobacco, alcohol, coffee, or tea. Family and past history negative, with the exception that patient has suffered indigestion for the past twenty years. Clinical examination negative, with the exception of the following: Flatulent indigestion; constipation; anemia; cardiac arrhythmia with pulse rate 120, blood-pressure 90/40. No enlargement of the heart that I could detect. Examination of his teeth disclosed the most septic condition that I can recall ever having seen. He had only thirteen remaining teeth, which were promptly extracted. Under stimulating tonic medication, regulation of diet, and with a properly fitted set of false teeth, his symptoms rapidly subsided and he speedily regained normal health.

Nasal Chamber and Accessory Sinuses.—Much evidence is now available to prove that infection of the nose and paranasal sinuses produce systemic disorders by the process of focal infection. These structures do not produce the marked disturbances that tonsils and teeth do, because of their better drainage facilities. When these structures become infected and obstructed, chronic focal infection is favored. The upper nasal membranes are especially absorptive. You will all remember the profound toxemia of nasal diphtheria.

Infection of these structures is especially prone to produce pathology of the gastrointestinal and respiratory tracts. This is done by direct spread of the infection along the mucous or submucous tissues, thus leading to pharyngitis, laryngitis, bronchitis, pleuritis, etc. Also, this infective material may be spread by inhalation of septic organisms. Personally, I have known one case of infective endocarditis which was without doubt produced by focal infection of the frontal sinus.

Not infrequently does infection of these structures give rise to symptoms simulating pulmonary tuberculosis, as illustrated by the following case:

CASE III.—Mrs. A. B. A., female, white, age 39 years, married; four healthy children; home surroundings excellent. Family history negative; past history negative, with exception of frequent colds of moderate severity. Present history: During month of March, 1928, had an attack of influenza of mild severity, with acute febrile reaction lasting two days. Sat up in chair on third day in heated room. On the fourth day, the patient felt severe pain over the right side of the face, and began to cough. Acute infection of antrum of Highmore was diagnosed and drainage attempted. The pain of the face subsided, but cough, afternoon rise of temperature, sweats, loss of weight, and general disability continued over a period of about four weeks. Definite lung involvement was diagnosed at both apices,

and acute pulmonary tuberculosis was seriously suspected. All of the laboratory procedures were negative at this time. I advised that expert accessory sinus diagnosis be obtained, which was promptly done. The right antrum, site of former acute infection, was definitely clouded. Free drainage with daily irrigations with saline solution, followed by mercurochrome instillation, rapidly eradicated the infection of the antrum. Rest, nourishing food, sunshine, fresh air, and stimulating tonic medication, following the above procedure, rapidly restored this lady to her usual good health.

Gallbladder.—It is very unusual to find primary focal infection of the gallbladder. It is usually streptococcic from tonsils or teeth, but rapidly changes to a colon bacillus infection. Once the infection is established it becomes a focus of infection for the whole body, giving rise to all sorts of disturbances of a toxic nature.

The Colon.—Whole volumes could be written—in fact, have been written—on this subject. We examine our patients carefully for infections of the tonsils, teeth, sinuses, etc., and, were it not on our history blank, we would entirely ignore the colon, dismissing the matter with the question, "How are the bowels?" Many infective foci of the colon escape diagnosis when their effects are apparent. Colonic stasis, with its change of intestinal flora and generation of septic toxins, is undoubtedly responsible for many foci of infection of the colon. The old theory of "no absorption from the lower bowel" has been exploded. It is very difficult to treat these patients; but with colonic irrigations, topical medication, and by the feeding of foods having a tendency to change the bacterial flora, wonderful results are produced. I have had the occasion to treat only a few of this type of patient, and do not have definite notes on them. The treatment I have instituted in my general practice is the elimination of meat and eggs from the diet, restricting patients to well-cooked cereals, green vegetables, cooked fruit, stale bread, fruit juices, and lacto-dextrin. My usual irrigation procedure for the first week is daily irrigation with warm, sterile solution of magnesium sulphate, one-half ounce in a half-gallon of water. The frequency of the irrigation is gradually decreased to three times weekly, twice weekly, and, lastly, once a week. I advise using the chemically pure drug, and instruct the patient in the use of the colon tube. I have never attempted the use of topical medication, believing that this can be done only by a very competent specialist in that line.

Genitourinary.—Everybody knows where a case of gonorrhea begins, but God is the only being who can tell you where it begins to end. The gonococcus is the offender in these infections, and whether the bacteria itself or its toxic products are absorbed and circulated is the big question. The only information I can get on this subject is that an investigator, working in the city of New Orleans, claims to have isolated the gonococcus from the wrist joint in pure culture. The endothelial tissues of the body are the sites of predilection, and usually the joints and endocardium, which rapidly become the victim of a mixed infection that rapidly becomes deep-seated, obstinate, and with a destructive pathology. The prostate is frequently a secondary infection, but becomes a primary one. It is one of the most frequent causes of lumbago, sacroiliac disease, nervousness, and rapid heart in young men. I have recently investigated some of these cases coming into my office, wherein the complaint was of lumbago and sacroiliac disturbances. You will perhaps be surprised to learn that the greatest percentage of these patients gave a history of having had gonorrhea about a year previous to the examination, and most of these were found with a chronic prostatitis. Formerly, I was of the opinion that coal-loading and influenza were the greatest producers of backache in men, but I am forced to change my opinion.

CASE IV.—W. B., female, white, age 19 years; single; one child, two years old, living and well. Family history negative, with the exception that mother died of carcinoma of the breast. Past history revealed the usual diseases of childhood; typhoid fever, lasting four weeks, during the year of 1926, with complete recovery. To tell you all about this girl's morals would not look well in print, but suffice it to say that she was seen at a rooming house at Thurmond during the month of July, 1928. Her chief complaint was pain in the right knee-joint, and upon examination the joint was found swollen, red, painful, but with no fluctuation. Her temperature on my first visit was 103° and the pulse 130. Her general appearance impressed me as being extremely ill. Her heart at this time was negative, other than that it was rapid. I inquired as to trauma of the knee, and she gave no satisfactory explanation. Naturally, I searched the throat and teeth for sources of infection, but without result. I secured a piece of broken window-glass, not having a slide with me, and obtained a smear from the cervix uteri. This was positive for Neisserian infection. The usual remedies were

applied, including hot permanganate douches per vagina every three hours, with massive wet packs over the hips. The patient did not improve, but, on the second day, developed a septic endocarditis, from which she died exactly six days from the beginning of the first symptom of arthritis.

Results of Focal Infection.—It is very apparent that almost any and every disease of a chronic nature may have its origin in any and every focus of infection. The list of diseases is widely extended. Tonsillar infection is perhaps responsible for most of the invasions of the endothelial cavities and tissues of the body; however, it is characteristic of tonsillar infection that even in apparently chronic cases it is still a subacute process, and the disease it produces partakes of this subacute quality. Dental infections are more prone to produce chronic diseases of the respiratory, gastrointestinal, and endocrinal organs. Gallbladder infections are principally colon bacillus processes, and usually produce general systemic toxemia of a very chronic nature and degenerative in character. Arteriosclerosis and brown atrophy of heart muscle are frequent results of gallbladder infection. Suffice it to say that many of the diseases of the central and peripheral nervous diseases find their origin in focal infection of the gallbladder. From the above history, it is probably easy to surmise the result of focal infection of the genito-urinary tract; however, this is not a typical case, as they and the diseases they produce are usually subacute. The list of diseases resulting from colonic infection is so long and varied that I would tire you to even attempt to name or to elaborate upon them. If you can take the time, read the articles published by Sir Arbuthnot Lane, of England, who lists the diseases from arthritis to cancer and further states that none of them can occur except in the presence of intestinal intoxication. He is most likely over-enthusiastic.

Once the diagnosis of focal infection is made—which, as stated, is not always easy—the question naturally arises as to what shall be done.

1. The seat of focal infection is a low-grade inflammation which has immunized itself against the body protective substances.

2. Such infection is spread through the body whenever the body defenses are diminished by exposure, poor food, overwork, unhygienic surroundings, etc.

3. At such times of the spread of the infection there is produced the same recurring disease.

4. If the focus be removed, the patient is freed of such recurring infection.

From the above you can plainly see four things to do; *viz.*:

1. Raise the patient's resistance.
2. Improve his living conditions.
3. Remove, if possible, the foci of infection.
4. Detoxicate the body.

THE POST-INFLUENZAL HEART *

By GILBERT O. CRANK, M.D.
Lawton, W. Va.

This subject has been selected by me with two thoughts in mind—the frequency of the condition, and the rarity of the general practitioner to pay any attention to the same.

For convenience, the post-influenzal heart may be divided into two classes: the sudden and the gradual types.

In the sudden type the symptoms appear abruptly. The patient is suddenly seized with precordial pain radiating to the apex, shoulders (more frequently the left shoulder), and the left cervical region. Pain is usually associated with dyspnea, cyanosis, and a facial expression of a dusky pallor. Occasionally the face has more or less the death pallor. The patient usually complains of "feeling cold."

Physical examination reveals the following signs: The skin is cold and clammy. The pulse is usually slow and feeble, but occasionally rapid. On percussion the area of cardiac dullness appears increased. Auscultation shows the cardiac sounds to appear distant and irregular, associated with a murmur at the apex, transmitted generally over the precordium and to the left axilla. The murmur is practically always systolic.

The gradual or delayed type is the one much more frequently overlooked and causes the greater embarrassment to the general practitioner. After an attack of influenza the patient appears to recover very slowly. He suffers no undue discomfort except weakness, dull, aching pain in region of both clavicles and base of sternum, and slight shortness of breath on exertion.

Cardiac examination: To the palpating hand, the apex beat appears feeble and irregular. The area of cardiac dullness apparently is not increased. The stethoscope reveals a distant cardiac sound and a soft systolic murmur at the base and apex. This is

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* Read before the Fayette County Medical Society at Oak Hill, West Virginia, December, 1929.

the type of case that is suddenly taken with a backset and manifests itself by the symptoms characteristic of an acute dilatation.

Prognosis: The sudden type, unfavorable to recovery; the gradual type, favorable.

Treatment: The acute type, when properly treated, responds very favorably. As the condition is supposed to be due to a deficiency of adrenalin in the circulation, adrenalin, hypodermatically, appears to be the logical drug. I usually start with five minims, repeating at twenty-minute intervals until a response is noted, then support with strychnine and digitalis. In treating the gradual type I find the most satisfactory results are obtained by the administration of iron in the form of Blaud's mass three times daily, after meals.

In conclusion, these notes are not intended to advance any new theories pertaining to influenza, but merely to stimulate attention to the heart in these frequent cases.

CASE REPORTS

SPINAL TUMOR

By A. G. RUTHERFORD, M.D., F.A.C.S.
Welch Hospital Number One
Welch, W. Va.

Patient: Mrs. M. B., Coalwood, W. Va.; white, age 26, housewife.

Chief complaint: Paralysis of both lower extremities, and bedsore over sacrum and right thigh.

Present illness: Patient was admitted to Welch Hospital Number One on November 28, 1929, with complete paralysis of both lower extremities. She states that her present condition began about three years before entering the hospital. At that time she gave birth to a normal child (normal delivery), stayed in bed five days, then got up and attended to her regular household duties. Two weeks later she noticed a tingling sensation in her right foot, followed by numbness and muscular weakness of the entire right lower extremity. One month later the same condition developed in the left leg, and six months after the onset she had complete motor paralysis of both lower extremities. She then went to a hospital at Huntington, W. Va., where she received treatment for six weeks, without improvement. She went home and has been treated symptomatically by local doctors from that time until entering Welch Hospital. She came then because a large, trophic ulcer had developed over the entire sacrum.

Past history: Has had the early childhood diseases. No history of diphtheria, scarlet fever, typhoid or pneumonia. Has never had a prolonged cough, but has had night sweats for the past month. No hemoptysis or chest pains.

Gastrointestinal history: Appetite good. No nausea or vomiting. Has slight accumulation of gas occasionally, but not enough to cause pain. Bowels have moved involuntarily for the past six months. Before this time, patient had complete control of the bowels and did not suffer with constipation or diarrhea.

Genitourinary history: Kidneys void involuntarily; amount appears to be normal. No pain over kidney region.

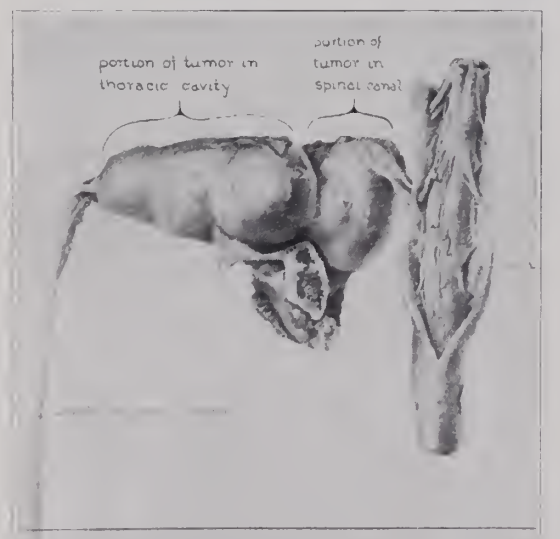
Marital history: Married when eighteen years old; three children living and well, no children dead; no miscarriages. Menstrual periods regular. No instrumental deliveries. All labors long and hard.

Physical examination: Small, white female; looks weak and anemic; unable to walk. Head is normal in size and contour; hair dark brown with normal luster. Pupils equal and round; react to light and accommodation; no ptosis or nystagmus; vision normal. Tongue slightly coated; teeth in poor condition; tongue protrudes in straight line; face shows no paralysis or weakness. Ears normal in appearance; hearing normal. No glandular enlargement of the neck; slight pulsation of great vessels, but not marked. Breasts are poorly developed and flabby; chest is thin but symmetrical; ribs prominent; breath sounds normal, no râles; percussion note normal. Heart rhythm regular; rate 88; muscle tone good; no murmurs; no evidence of enlargement; blood-pressure 110/80. In the abdomen, many striæ are present; abdominal wall thin and relaxed; no tenderness, distention or masses present; abdominal reflexes absent; back shows deep ulcerated area, five inches in diameter, over sacrum and extending over right hip; ligaments of sacrum visible; no control of bowels or urine; internal and external sphincters relaxed. All muscles of the lower extremities show marked atrophy, probably from disuse; the thighs have a tendency to flex on abdomen, and the knees stay in a flexed position—when straightened out they will gradually draw back into the flexed position in jerky movements; all sensation absent from toes to a line two inches above the symphysis pubis; there is complete motor paralysis of both lower extremities; no pain on manipulation; feet and ankles are somewhat

swollen and pit on pressure; patellar reflex absent; Oppenheim and Gordon signs negative; questionable Babinski on left side; no ankle clonus. Spinal puncture between third and fourth lumbar vertebræ shows decreased pressure (four millimeters of mercury) with positive Queckenstadt sign. There is evidently a complete block.

Patient was running a temperature of 102° to 103° on admission, due to absorption from the large trophic ulcer. Urinalysis showed two-plus albumin, no sugar or pus cells. Leucocyte count 10,000; hemoglobin 60%; erythrocyte count 3,500,000.

Due to the patient's poor condition, radiographic study of the spine was postponed until we could get her in a better physical condition. The trophic ulcer



Anterior view, spinal tumor of rt 7th intercostal nerve

started to heal at first, but then made no further progress. Four weeks after admission the patient suddenly became seriously ill and died the following day, apparently from toxemia. A post-mortem examination of the spine was made and our tentative diagnosis of spinal tumor was confirmed. A report of the autopsy findings is as follows:

Autopsy Findings.—A longitudinal incision was made over the spinous processes of the thoracic vertebra. The spinous processes and lamina were then removed from the fourth to the twelfth thoracic vertebra, exposing the spinal cord between these points. At the level of the seventh thoracic vertebra the spinal cord was tightly compressed against the left side of the spinal canal by an extradural tumor about the size of a hickory nut, lying between the cord and the right side of the canal. The tumor was firm and encapsulated, and attached to the dura covering the posterior nerve filament of the seventh thoracic spinal nerve. The tumor seems to follow along the seventh intercostal nerve, and another larger lobe of the same tumor was found inside the thoracic cavity under the seventh rib, close to the vertebral column. It was attached to the intercostal nerve.

The entire tumor was removed and found to be firm and encapsulated. It measured 7:5 cm. in length, 3.5 cm. in width. There was a constricted portion between the two lobes. The entire tumor weighed 70 gms.

Diagnosis: Spinal tumor, level of seventh thoracic vertebra. Probably fibroma. (This will be determined on microscopic study.)

THE MEDICAL COLLEGE OF VIRGINIA
HOSPITAL DIVISION
RICHMOND VIRGINIA
PATHOLOGICAL DEPARTMENT
Tissue Examination

Laboratory number: Outside. Date received: January 10, 1930. Hospital: S-30-57. Name: Baldwin, Mrs. Mary. Organ: Spinal cord tumor. Doctor: Rutherford. Clinical diagnosis: Reported January 10, 1930.

Gross description: The tumor was not examined carefully at this time, but two small pieces were cut from representative areas of the formalin fixed tissue for rapid diagnosis.

Microscopic description: Frozen sections show a rather cellular growth composed of cells of irregular size and shape with spindle and rounded forms predominant. There is considerable polymorphism. Many well-developed fibers of connective tissue are present, giving the whole the appearance of a mixed-cell sarcoma of moderate degree of malignancy. It is generally encapsulated, but invasion of this and nearby structures has taken place.

Pathological diagnosis (preliminary report): Mixed-cell sarcoma of apparent moderate malignancy.

Report of So-Called Hour-Glass Tumors of the Spine.—To the comparatively few who have personally observed them at the operating or autopsy table, these have a very general interest, for, while they implicate the cord eventually and are therefore more often seen by the neurologist and neurosurgeon, their paravertebral portions may present in the neck or back to confuse the general surgeon, just as they may present in the thorax, the abdomen, and the pelvis. They deserve perhaps to be recognized as a clinical group, for while their pathologic processes may vary, they arise from restricted region

in or about the spine, show peculiar tendencies in their growth, and often give rise to distinctive signs and symptoms.

Definition: The term "hour-glass tumors" is applied to a group of tumors which arise along the spine from the highest cervical to the lower sacral vertebræ, either from within the spinal canal (ganglions, nerves, dura, vertebral ligaments), from the vertebra (cartilage of intervertebral disks), or from without the spine (sympathetic chain, ribs, fascia). Arising intraspinally, they have been thought to grow outward through an intervertebral foramen or between two adjoining laminæ to form an extra or paravertebral tumor; or, arising paravertebrally, they have been thought to extend through an intervertebral foramen into the spinal canal to form there an intraspinal growth. At the point where they penetrate the intervertebral foramina the tumors are constricted, and, therefore, assume an hour-glass shape. The term has been used to include tumors which are entirely intraspinal but which are both intradural and extradural, arising either within or without the dura.

Diagnosis: The routine examination of patients with possible tumors of the cord should include not only a careful neurologic examination, but also, depending on the level of the spinal lesion, a careful examination including a röntgenogram of the neck, the thorax, the back, the abdomen, and the pelvis. Otherwise, a paravertebral tumor may well be missed.

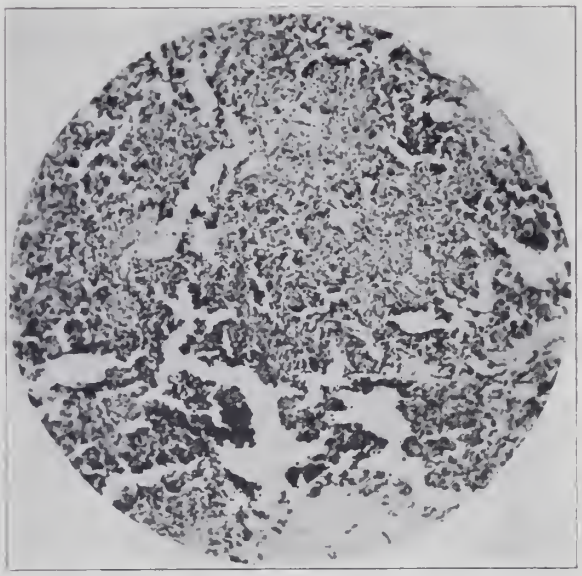
Treatment: In 1925, Elsberg stated that "up to recent years, an extradural tumor that was an extension inward of a growth in the soft tissues of the back or in the posterior mediastinum, or that, *vice versa*, had extended outward into the soft parts of the back or between the ribs, was considered irremovable." In my opinion, this point of view, as Elsberg rightly stated, will have to be changed. The technical difficulties attending their removal are by no means insurmountable, nor is the operation necessarily severe. Depending on the patient's condition, the operation may, in my opinion, be done in one or two stages, and the two-stage operation will undoubtedly come into question if the paravertebral tumor be especilaly large or its removal likely to be attended with difficulties. In small paravertebral tumors, whether these lie in the neck, mediastinum or back, a one-stage operation is probably desirable.

LYMPHOSARCOMA OF VULVA

By E. M. DUNSTAN, A.M., M.D.
City Hospital
Elkins, W. Va.

The following is the case of a young girl of seventeen, Miss R. C., of Davis, West Virginia, who was admitted to the Elkins City Hospital on February 13, 1930, complaining of much pain in the right shoulder region which had lasted for four weeks and was becoming worse, so that she was forced finally, reluctantly, to give up her business course in another town and come home to receive medical attention.

The family history revealed no known chronic illnesses. There were two miscarriages in mother's family. Past history revealed the usual childhood

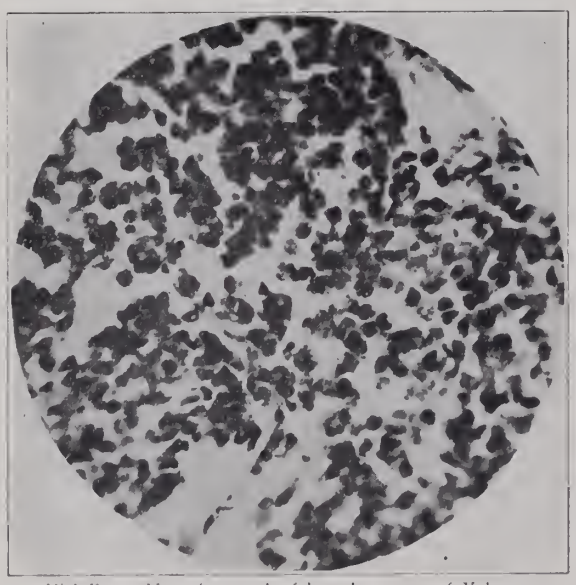


Low-Power Microphotograph of Lymphosarcoma of Vulva

diseases without complications, influenza in 1926, and occasional attacks of sore throat. Review of systems revealed no abnormalities in cardiorespiratory, genitourinary, and menstrual histories. In the gastrointestinal analysis it developed that she had had, for the last few weeks, a marked constipation which was gradually becoming worse. Four months previous to admission she noticed for the first time that the skin around her vulva was becoming thicker. This has gradually become worse until now it involves all of the vulva and the region around the anus. There has been no pain associated with this thickening; only the marked constipation. Lately she frequently has to sit at the stool half an hour or more to obtain results, and even then often has to have the assistance of a syringe. False mod-

esty has kept her from mentioning this to any one until a week ago, when she came home and her mother noticed that there was something wrong. The pain in the right shoulder region seems to start in the base of the neck and travels to the arm-pit, occasionally reaching the elbow. It is a constant ache and bothers her more on the anterior part of the arm than posteriorly. The last week it has been so severe as to keep her awake at nights. This has led her parents to call their family physician, Dr. E. F. Moore of Davis, who promptly detected the seriousness of the situation and referred her here for further study.

Physical examination revealed a well-developed and fairly well-nourished young girl, who gave the impression of being somewhat septic. Temperature,



High Power Microphotograph of Lymphosarcoma of Vulva

pulse and respirations were normal. Eyes, ears, and nose showed nothing remarkable. Tonsils were moderately enlarged and somewhat cryptic, giving no evidence of acute inflammation. The right brachial plexus region and vicinity from the vertebræ to the right shoulder was somewhat tender on palpation. Heart, lungs, abdomen, and extremities showed nothing remarkable. The vulva revealed a very extensive infiltration, involving both labia majora up to the pubic bones in front and back to the coccyx behind. The inguinal nodes were moderately enlarged, especially on the left side. The skin was very thick and presented an eczematous appearance, though not in the least tender. Attempt to introduce the examining finger into the anal and vaginal orifices failed, due to the extensive infiltration having partially encroached on the lumen of the openings. Moreover, the attempt to carry out this examination was very painful.

Blood count showed slight secondary anemia; no leucocytosis. Urine was negative, Blood Wassermann was negative. Removal of an inguinal node was done and microscopic examination revealed lymphosarcoma. Attached are enlarged low- and high-power microphotographs of the growth. X-ray of chest and upper spine was negative for metastasis.

Symptomatic treatment for the shoulder pain was carried out. Radium therapy was immediately instituted for the lymphosarcoma, but to no avail.

The patient has been sent home. The pain in the right shoulder region is becoming worse, requiring frequent hypodermics of morphia. The constipation is becoming more obstinate, and the patient has become weaker and weaker, being totally confined to bed for the past two weeks.

We were unable to explain satisfactorily the intense neuralgic type of pain in the right brachial plexus region, which has always been her chief complaint, unless it be due to a focus of infection—most probably the obstinate constipation caused indirectly by the lymphosarcomatous growth.

HOW FAR SURGERY?

By B. I. GOLDEN, M.D., F.A.C.S.
Davis Memorial Hospital
Elkins, W. Va.

While the title of this paper certainly does not give a hint as to its contents, there are several reasons why I believe such a communication is not amiss at this time. It has not been long since surgery was looked upon as the menial side of medicine. The surgeons in the olden days were the barbers, and the multi-colored pole his certificate of ability. I recall a statement of the late Horatio C. Wood, Sr., who, on being asked a question involving surgical technique, told the jury he was a medical man and used his brains and not his hands for a living. In more recent years we have seen surgery, because of its marvelous accomplishments and scintillating aspects, become the supreme pinnacle of medical endeavor. Indeed, this became so prevalent that few had the courage not to boast of some surgical ability. The pendulum is beginning now to stop its excessive gyrations and a balance is being reached. It is the balance about which I wish to speak.

While surgery has made wonderful strides in its technique and through its asepsis, the surgeon of today is realizing that physiology is perhaps even more important than pathology. If we are to accom-

plish results it must be done along physiological lines. Probably there is no better illustration of this than the so-called chronic appendix. A few years ago, when nothing else could be found in the abdomen, a diagnosis of chronic appendicitis was made, the organ removed, the diagnosis always verified; but, as is well known, the patient received but temporary relief, and that probably due to the enforced rest. Why? Chronic appendicitis, as we know it today, is not an individual entity, but may involve many of the abdominal contents. More often than not we find an involvement of the gallbladder, stomach, and a chronic constipation. Thus the removal of the appendix will not correct all the existing pathology. Surgery alone can not reëstablish a full physiological readjustment. The internist becomes a very important factor in the future health of this patient. Neglect of this fact on the part of the internist forces the patient to lose confidence in all things medical.

We know that pathology of the gallbladder or stomach will, and most often does, involve other viscera, sometimes causing metabolic disturbances that are far-reaching. Here, again, results will be obtained only by close coöperation between the surgeon and internist.

And so I could go on and enumerate many such instances as illustrated above, wherein surgery has its limitations. More often than not, successful surgery depends on a comprehensive treatment by the internist after the surgeon has finished. So often we see a patient with peptic ulcer suffering as much prior to his operation and devoid of all hope of a peaceful life because of the failure of the internist to give the case proper post-operative care.

I am of the opinion that there is still too great a laxity in the coöperation of the surgeon and the internist for the benefit of the patient. I have seen too many patients to whom it has been explained that operation alone would not entirely be curative and that there must be a great deal done post-operatively to return them to good health. I say I have seen these patients only too glad to coöperate, and find that they do so. Thus I am inclined to lay the blame at the door of the profession. This is not scolding, nor is it a criticism of the individual, but rather emphasizing facts as they confront us in our present-day knowledge. Many of us still labor under the old fallacy that a patient will think more of us if given a prescription and we encourage the delay of surgical intervention. It is this belief that gives us our discouraging morbidity rate and encourages the patient to seek relief from the cults and *-isms*.

May I offer this suggestion?: The referring physician should demand of the surgeon a more comprehensive report of his findings at the table, that the surgeon demand of the physician a more thorough investigation of the conditions existing prior to operative intervention. I can not but believe that the physician who has thoroughly studied his patient will not have a greater desire to carry that patient back to health, nor the surgeon who knows that his operative findings and procedures will be placed on paper for the scrutiny of an intelligent physician will not and can not cover his surgical shortcomings by a lot of foolish statements to an ignorant family. May I divert a moment to say I believe this is doing a greater damage than we are willing to admit, and that this, unfortunately, applies to some of the leaders of the profession?

Therefore, if I have done but one thing in this paper—that of encouraging closer coöperation between the physician and the surgeon—my efforts will not have been in vain; because, by this coöperation, each is going to demand of the other a more scientific approach to the subject, and I can not but feel this will do much to eradicate slipshod medicine and financial surgery.

TUBERCULOSIS ABSTRACTS

Intestinal Tuberculosis

While it is possible for the intestine to become involved in a generalized tuberculous infection, in most instances the condition is secondary to pulmonary tuberculosis and is caused by the swallowing of tuberculous sputum or by hematogenous deposit. The earliest and most usual distribution of lesions is in the region of the ileocecal valve. Other portions of the bowel may become involved later, though tuberculosis of the stomach is exceedingly rare. Common symptoms and signs are diarrhea, constipation, cramp, and tenderness. Sometimes a mass may be felt in the ileocecal region. In general, the findings, while suggestive, are not sufficiently clear-cut to warrant an exact diagnosis.

Stierlin's Technique.—Stierlin, in 1911, described röntgen-ray findings which he believed to be definitely diagnostic of intestinal tuberculosis. He gave two glasses of a liquid bismuth meal and took röntgenographs after 6, 8, and 24 hours. In tuberculous involvement of the intestine, the cecum and ascending colon revealed no shadows, whereas the

terminal ileum and transverse colon were filled. The explanation he gave for this is that, as the result of the ulceration in the ileocecal region, irritability and motility are increased and the bismuth is quickly passed along. In some cases, Stierlin found a partially filled portion of the colon with fine marbling or long-drawn-out shadows, which he attributed to the retention of bismuth by the ulcerations. Studies made subsequently by others discount somewhat the reliability of Stierlin's sign, as it may occur in any ulcerative or indurative changes in the cecum, which Stierlin himself admitted. On the other hand, the sign is lacking very often in cases of tuberculosis in that region of the gut.

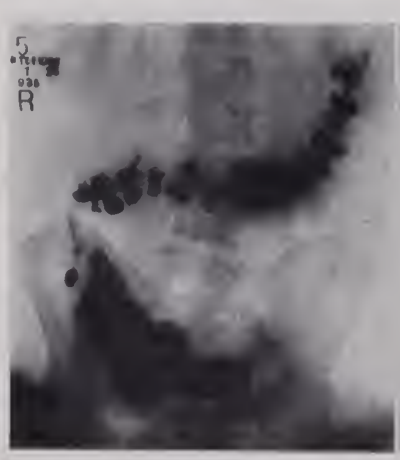
Trudeau Studies.—Brown and Sampson applied Stierlin's technique and in an early publication reported 39 cases diagnosed by the röntgenograph, of which 38 were corroborated by surgical exploration of the abdomen. In a later monograph on this subject, published in 1926, they state:

Since 1918, 2,595 patients have been studied in the röntgen-ray department at Trudeau, in regard to the presence or absence of intestinal tuberculosis. In all these patients, a diagnosis of pulmonary tuberculosis had caused them to seek treatment. In 867 patients a positive diagnosis was made, and in 1,726 tuberculous colitis was excluded. Of the negative group, 46 went to operation or autopsy, and in 44 tuberculous colitis was absent, while in 2 it was present. In the 62 cases diagnosed as positive by the röntgen-ray method which went to operation or autopsy, all had tuberculous colitis.

Montefiore Studies.—Encouraged by the work of Brown and Sampson, Steinbach studied, during the past six years, 273 cases at Montefiore Hospital, of which 71 cases came to necropsy. Four cases were excluded because of faulty technique, leaving 67 cases in which it was possible to correlate the röntgen findings with those of necropsy. Care was taken to excise, wash and inspect the intestinal mucosa as lesions are often confined to the mucosa and submucosa and are not visible through the serosa. Often the ulcerations are found only after microscopic search. The 67 cases thus correlated are divided into two groups, Group I embracing 32 cases in which röntgen and necropsy findings were in agreement, and Group II, in which they did not agree in 35 cases.

Why Findings Disagree.—Special investigations were made to discover why, in certain cases, the röntgen and necropsy findings did not agree. After citing specifically several case histories, the author concludes that "these cases illustrate that defect in filling of cecum and ascending colon, associated with hypermotility, is not always pathognomonic of tuberculous colitis, but may be present in other conditions of the large and small intestines in which there is irritability resulting in diarrhea. Fishberg enumerates the commonest causes of diarrhea in tuberculous patients as follows: (1) intestinal ulceration, (2) intestinal catarrh, (3) dietetic errors, (4) amyloid degeneration, (5) swallowing of sputum, and (6) toxemia. It is easy to see that any one of these above enumerated causes may produce the classical clinical signs of tuberculous enteritis without the presence of intestinal ulceration."

Conversely, he finds that "absence of hypermotility and defect in filling does not exclude tuberculous colitis or enteritis or a combination of the two."



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THE WEST VIRGINIA MEDICAL JOURNAL

JAMES R. BLOSS, EDITOR-IN-CHIEF . . HUNTINGTON

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¶ Our readers are requested to send marked copies of local newspapers containing matters of interest to members of the medical profession. Name of sender should be given.

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PRESIDENT'S PAGE

THE functions of a state medical journal differ considerably from those of a purely scientific periodical. It should, of course, present the original work of the membership; but this, especially in a state of small communities and few medical centers, is necessarily of limited volume.

Probably the greatest value to the profession it serves lies in the fact that it affords a medium of expression for the membership of the local component societies. It is true that much of the matter presented at the county meetings is of no specific permanent worth, but if the author realizes that his effort stands a reasonable chance of appearing in print, he studies his subject much more thoroughly and is decidedly more careful in his mode of expression. The state journal thus is, in a limited sense, an instrument of post-graduate education, and may aid considerably in the professional development of the individual physician.

One of the chief functions is the collection and dissemination of state medical news. Nothing attracts so much the interest of the men throughout the state as a good "News Notes" column. We trust, therefore, that our readers will assist the Publication Committee by sending in news items and clippings from the lay press which will be of interest to the profession.

Walter E. West

EDITORIAL

The White Sulphur Meeting

There are those who say that the sixty-third annual meeting of the Association at White Sulphur Springs last week was the best one that the Association has ever held. Perhaps so, perhaps not; but the fact that this comment was made so many times is evidence in itself that the White Sulphur meeting was a real success. The program was splendid, the weather was fine, the hospitality was unexcelled, the registration was ample, the meetings were well attended, and the convention went through without a hitch. It was, to say the least, a congenial gathering of doctors and doctors' wives who spent three pleasant days listening to scientific medical presentations and rubbing elbows with their confrères.

It might be well to review a few of the "high spots" of the convention here, as the complete convention report will not appear until the July issue of the Journal. Of major interest was the election of Dr. C. H. Maxwell, of Morgantown, as the 1931 president. Dr. A. H. Hoge, of Bluefield, was elected first vice-president; Dr. H. L. Goodman, of Ronceverte, second vice-president, and Dr. T. M. Barber, of Charleston, treasurer. Clarksburg was selected as the 1931 convention city.

Also of major importance was the reinstatement of the medical defense fund into the constitution and by-laws of the Association. A new method of administering the fund was worked out by Dr. C. A. Ray, of Charleston, and the plan of administration was incorporated in the new amendment. The amendment was made retroactive to January 1, 1930, as the assessment for the fund had already been made and collected for the present year. The new amendment differs from the old by making the president *ex-officio* chairman of the defense committee, in the selection of six rather than three committeemen, in the amount allowed for each malpractice suit, and in the allowance of a substantial fee for scientific medical witnesses.

At the White Sulphur meeting a number of changes were made in the constitution, relating to holding office. The office of third vice-president was eliminated and two councillors-at-large were created, to be the retiring president and his immediate predecessor. The retiring president shall be chairman of the council. All members of the council were limited to two successive terms of two years each, with a provision that they could be reëlected after one year's absence from the council. The time for the election of officers was changed from the morning of the last day of the annual meeting to the evening of the first day of the annual meeting. Past presidents of the Association, after serving as councillors-at-large, have been barred from holding any other office within the gift of the Association except that of A. M. A. delegate, board of publishers, and scientific committee member.

The convention was called to order at ten o'clock on the morning of May 20 by Dr. James R. Bloss, of Huntington, acting for Dr. W. E. Vest, president. Dr. Vest was called away from White Sulphur Springs on the opening day of the meeting, but returned that evening in time to deliver his President's Address before an open meeting of the Association. Prior to the opening of the convention, the council met on the afternoon of May 19 and the house of delegates on the same evening. Committee reports were heard at these two sessions and a number of important business affairs were transacted.

The three sectional meetings were held on Wednesday afternoon, May 21, and the convention banquet and ball were held that evening. The scientific program was concluded with the oration on medicine the next morning by Dr. George H. Bigelow, health commissioner of Massachusetts, Boston, and the election of officers followed.

A report of the new medical defense provision and a report on the new amendments to the constitution will be found elsewhere in this issue of the Journal.

Frame Your Certificate

On page 28 of the back advertising section of this Journal will be found a *facsimile* reproduction of a mahogany-and-gold picture frame that is available through the Association for the state membership certificates. The frame is well made of the best material and will look good in any doctor's office. It has a removable back so that the new certificate received each year can easily be inserted in place of the old certificate. Anticipating a large number of orders for this frame, the Association was able to secure an unusually good price.

A properly framed state certificate hanging in a doctor's office is a good thing for both the doctor and the Association. For further information, please turn to page 28 in the back advertising section.

ANNOUNCEMENTS

The American Association for the Study of Goiter will hold its annual meeting at Seattle, Washington, on July 10 and 11, 1930, and at Tacoma, Washington, and Mount Rainier on July 12, 1930. Dr. E. R. Arn, of Dayton, Ohio, is president of the association.

Dr. H. G. Little of Wheeling, Dr. F. C. Hodges of Huntington, and Dr. D. A. MacGregor of Wheeling were among the scientific essayists at the tenth annual session of the Ohio Society of Clinical and Laboratory Diagnosis, which was held in Columbus on May 9 and 10, 1930. The president of the society is Dr. W. M. Sheppe of Wheeling. Dr. Little spoke on "The Coexistence of Carcinoma and Tuberculosis," Dr. Hodges on "Agranulocytosis," and Dr. MacGregor on "The Relation of the Pathologist to Clinical Medicine."

The thirty-first annual session of the American Proctologic Society will be held at Buffalo, New York, on June 22–24, 1930. Headquarters will be at the Statler Hotel. Arrangements are in charge of Dr. D. C. McKenney, 461 Linwood Avenue, Buffalo.

Merck and Company, of Rahway, New Jersey, have just announced publication of the fourth edition of *Merck's Index*, an encyclopedia of drugs and chemicals. The subscription price is five dollars, less a discount of fifty per cent for members of the Association.

The ninth annual session of the American Congress of Physical Therapy will be held from September 8 to 12, 1930, at the new Hotel Jefferson, St. Louis, Missouri. An intensive post-graduate week of physical therapy is promised.

COUNTY SOCIETY NEWS

Fayette County

The Fayette County Medical Society met in the new high school building at Montgomery on Tuesday, May 13, 1930. The following scientific program was given:

"Traumatic Surgery: Its Relation to Industry," by Dr. C. W. Stallard of the Montgomery Clinic, and discussed by Dr. William R. Laird and Dr. Ralph Hogshead. Dr. Laird, in his discussion, brought out the fact that fifty per cent of the disability in injured patients was due to improper treatment.

Dr. Woodbridge, of the Coal Valley Hospital Staff, gave a very interesting case report on "Pernicious Anemia." This was discussed freely by the society.

C. W. STALLARD, Secretary.

Ohio County

Dr. H. W. Bond, of Wheeling, formerly secretary of the Ohio County Medical Society, was elected president of that organization at the annual election of officers held on the evening of May 9, 1930. Dr. Bond will succeed Dr. Howard T. Phillips, of Wheeling, who served during the past fiscal year. Dr. Robert J. Reed, Jr., was elected vice-president at the May 9 meeting; Dr. H. C. Harpfer, secretary, and Dr. R. W. Lukens, treasurer.

Delegates to the state meeting at White Sulphur Springs were Dr. Howard T. Phillips, Dr. E. S. Bippus, Dr. R. U. Drinkard, and Dr. E. F. Glass. Alternates were Dr. R. B. Bailey, Dr. A. J. Goodwin, Dr. A. K. Hoge, and Dr. R. C. Bond.

The new board of censors of the Ohio County Medical Society, which was also elected at the May 9 meeting, consists of Dr. R. U. Drinkard, Dr. W. P. Sammons, and Dr. D. A. MacGregor.

Dr. W. M. Middleton, associate professor of clinical medicine at the University of Wisconsin Medical School, Madison, Wisconsin, was the scientific essayist at the May 2 meeting of the Ohio County Medical Society, held at the Elks' Club, Wheeling. His subject was "Industrial Diseases of the Lungs." Discussion was opened by Dr. George L. Vieweg and Dr. E. E. Clovis.

Grant-Hardy-Hampshire-Mineral

The April meeting of the Grant-Hardy-Hampshire-Mineral County Medical Society was held at the Tri-Towns Hotel, Piedmont, on the evening of April 19, 1930. Dr. Thomas Bess, president, presided. The scientific program was presented by Dr. John E. Legge and Dr. C. J. Abeshouse of Baltimore. Dr. Legge talked on "A Useful Sign in the Diagnosis of Ureteral Stricture and Its Sequellæ." Dr. Abeshouse presented a paper on "The Clinical Significance of Hematuria." Both papers were illustrated with lantern slides and were liberally discussed.

T. C. GIFFIN, Secretary.

Monongalia County

The regular monthly meeting of the Monongalia County Medical Society was held in the junior high school library, Morgantown, on the evening of May 6, 1930. The scientific program was presented by Dr. M. L. Bonar on the subject, "Treatment of Skin Diseases." A liberal discussion followed.

G. R. MAXWELL, Secretary.

Kanawha County

Dr. G. Paul LaRoque, professor of surgery at the Medical College of Virginia, Richmond, was the principal speaker at the May 6 meeting of the Kanawha Medical Society, held in the Public Library building, Charleston. Dr. LaRoque gave a discussion of the causes of hernia, with special reference to the possible influence of injury. His paper was discussed at length by the members present.

The remaining scientific program consisted of a paper by Dr. G. G. Irwin, Charleston, on "Vesico-Vaginal Fistula," a case report. Dr. John W. Moore, of Charleston, presented a most interesting moving picture on the normal heart.

D. N. BARBER, Secretary.

Marion County

The April meeting of the Marion County Medical Society was held in the Y.M.C.A. auditorium, Fairmont, with more than forty members in attendance. Dr. S. S. Hall, Fairmont, gave a most interesting paper on "Bronchiectasis," illustrated with radiographs. Also, a moving picture was shown at this meeting, entitled "Benign Hypertrophy of the Prostate." The Marion county society is displaying great interest in the society this year, and attendance at all meetings has been excellent.

Child Health Day was celebrated in Fairmont on April 22 by the county schools with a gigantic health parade and program under the auspices of the Marion County Health and Welfare Association. Dr. F. F. Sowers, Marion county health officer, was in charge of the affair.

PHILIP JOHNSON, Secretary.

PUBLIC HEALTH

Negro Infant Mortality

A report has recently been issued by the United States Public Health Service on a study based on negro and white infant mortality rates in the urban and rural areas of a group of northern and southern states, in urban and rural Maryland, and in four cities, *viz.*, Richmond, Va., Charleston, S. C., New Orleans, La., and Baltimore, Md.

In every area studied, negro infant mortality rates were higher than the corresponding rates for white infants. This difference was most marked in the urban areas of the south. Negro infant mortality rates in the rural south, however, were nearer to those of the corresponding white infant mortality rates than in any other area. The lowest negro rates were found in the rural south and the highest in the southern cities. On the whole, infant mortality among the negroes shows trends similar to those shown by infant death rates among the white populations of the same communities. In two cities, Baltimore and Richmond, negro infant mortality has declined more rapidly than that of the white population.

The study also discusses negro and white infant mortality from various causes in several of the southern states of the birth-registration area. Negro infant death rates are higher than the rates for white infants for every cause except four contagious diseases. The greatest excess of negro over white infant deaths was due to unknown and ill-defined diseases. Deaths from respiratory diseases, all forms of tuberculosis, and gastrointestinal diseases were considerably more frequent among negro than among white infants. Mortality among infants of both races is extremely high during the first month of life; white rates fall rapidly during successive months; negro rates also decrease, but the decline is not so sharp. The ratio of negro to white infant deaths is highest between the fifth and the tenth month. The excessively high rates which occur in both races during the first month are due for the most part to premature birth and congenital debility. Negro and white infant mortality from these causes are very much alike. The principal cause of the excess of negro over white infant deaths from the second to the tenth month is pneumonia. Deaths from diarrhea and enteritis are considerably more numerous among the negroes than among the whites.

Infant mortality from diarrhea and enteritis is on the decrease among both races in Maryland. The reduction in the number of deaths from this cause has been much more rapid during the past ten years than before 1920. White rates fell somewhat more rapidly than negro rates. In Maryland, infant death rates from all forms of tuberculosis are considerably higher among the negro than among the

white infants. The rates have declined much more rapidly among the white population. There is little improvement in the rates from diseases of early infancy in either race. There has been, on the whole, more reduction in the death rate from diarrhea and enteritis in urban than in rural areas. In the six southern states studies, urban rates are higher than rural, except in Maryland.

Pellagra Preventive

In connection with studies relating to the pellagra preventive properties of various food substances, the United States Public Health Service has recently announced that canned salmon (Alaska chum) contains the pellagra preventive factor. By reason of its potency in preventing pellagra and its availability in the preserved state, salmon may be considered a fair substitute for meat in the area of pellagra endemicity where meat is not readily available. The demonstration of the pellagra preventive value of canned salmon furnished further evidence of the soundness of the working hypothesis that black tongue in dogs is the analogue of pellagra in man.

Deaths in State Increase

An increase of 619 deaths in West Virginia in 1929 brought the figures for the state up to 18,130 as against 17,511 in 1928. This was the highest figure since 1926. While deaths from preventable diseases and diseases of early infancy showed a downward trend, those from accidents, heart disease, pneumonia and influenza registered an increase, according to figures compiled by the division of vital statistics of the state health department.

Children under five years of age formed 24.8 per cent of the total deaths in the state, showing that from infancy to five years is still the "dangerous age" and that more care and study should be given to the preschool child. This is a part of the program that the state health department is promoting throughout the state.

That the span of three-score years and ten is enjoyed by many in West Virginia is shown by the fact that, after early infancy, the highest percentage of deaths (14.4) was among those from 70 to 79. The records also show that 208 persons (99 males and 109 females) who died last year had reached the age of ninety or more years.

Accidents still held the lead in the causes of death in this state, with 1,668 deaths. However, the past three years has shown a decrease of 214 deaths from the cause.

Organic heart disease continues to hold second place in the deaths, not only in this state but in the nation as a whole. Each year has marked an increase in this cause of deaths as shown by the following figures: 1,354 in 1927, 1,504 in 1928, and 1,632 in 1929.

Influenza deaths jumped from 446 in 1927 to 1,559 in 1929. This is attributed to the epidemic which struck West Virginia the latter part of 1928 and the early months of 1929. The effects of the same epidemic is reflected in the pneumonia deaths as shown by the figures for 1929, which were 1,462 as against 1,315 in 1928 and 1,173 in 1927. According to the figures, the principal victims of this disease were children, 599 of the 1,462 being under four years of age.

Tuberculosis deaths decreased 52 in 1929, bringing the number of deaths from this disease under a hundred a month for the first time. Tuberculosis deaths for the past three years are 1,220 in 1927, 1,215 in 1928, and 1,163 in 1929. Early diagnosis followed by prompt treatment is showing its effect in this field.

Diseases of early infancy claimed 1,226 children, or 48 less than the preceding year. Cancer and nephritis both registered a decrease last year, cancer dropping from 1,058 in 1928 to 980, and nephritis from 1,059 to 928.

In the field of preventable diseases, diphtheria claimed 126 as against 132 the previous year. Over 51 per cent of these diphtheria deaths occurred in children under four years of age. It is this younger group that the health authorities are endeavoring to reach with the immunzation work, so that this disease of childhood may be driven from the state.

After reaching the lowest mark in the history of the state in 1928, typhoid fever deaths again rose 22 points in 1929, a total of 197 deaths being recorded. Health authorities are promoting a program of immunization and sanitation in an effort to reduce this disease in West Virginia. During the past year 80,900 persons have taken the typhoid vaccine, and the sanitary conditions in many communities are being improved daily.

Interstate Spread of Disease

The average citizen seldom has occasion to inquire into the measures which are taken to protect him from communicable diseases while he is travel-

ing on a train or vessel from one part of the country to another. He embarks upon his journey with perfect confidence that the water and food which will be provided for him will be as safe and wholesome as that which is served on his own table, and that his environment will be characterized by the same attention to sanitation and other health requirements that he enjoys under the administration of his own well-organized and efficient local health department. Yet this is not accomplished without care and effort; and the railroad and steamship companies would be unable to afford the health protection which they desire that their patrons should have unless they were given the backing and assistance of public health authorities which, in the case of interstate carriers, is provided by the federal government itself through the United States Public Health Service.

The regulations under which this Service acts are the interstate quarantine regulations promulgated by the secretary of the treasury in accordance with federal law. They stipulate under what conditions persons suffering from communicable diseases may be transported by common carriers, and they provide for their care *en route* and, after arrival, at their destination, in such a way as to prevent them from being a source of danger to other persons. A government permit is issued for each individual case after consent has been obtained both from the state health officer from whose jurisdiction the case is being removed and from the one into whose jurisdiction it is going. While the precautions to be observed *en route* differ somewhat, depending upon the disease, they consist, in general, of the provision of an isolated compartment and a trained attendant who remains in isolation with the patient. Eating utensils are furnished for the exclusive use of the patient and his attendant. All necessary disinfection is carried out. Upon completion of the journey and the removal of the patient, the space and its furnishings are disinfected according to prescribed methods.

The drinking water which is furnished on common carriers must comply with a standard formulated by the treasury department, and can be derived only from sources whch have been inspected and certified by government officials as being free from pollution and from danger of pollution. This standard is high, and there are many cities and smaller communities whose inhabitants are drinking water of a sanitary quality far below that which common carriers are permitted to serve.

In the case of vessels engaged in interstate traffic, the drinking-water piping systems are carefully traced out and inspected at certain intervals by sanitary engineers of the public health service in order to insure against cross-connections between the drinking-water systems and the fire or wash-water systems, which frequently carry grossly polluted harbor water. Most vessels of the better class are now constructing entirely separate systems for drinking water and for water used for other purposes, and are also equipped with the finest sterilizing apparatus in order to render water safe if, in case of an emergency, it should be necessary to draw it from a doubtful source.

The ice which is used for cooling water in the drinking-water tanks is now separated from the drinking water. This is a necessary safeguard because the ice, while being carried to the cooler and placed in it, is subject to contact with hands not altogether clean, and has been known to slip from the grasp and fall into unclean places, whence it has been recovered and placed in the tank without removal of the dirt.

Grade A pasteurized or boiled milk is a recent requirement for use on common carriers, and, in addition, certified milk as defined in the standards adopted by the American Association of Medical Milk Commissions may be served if the carrier elects.

The coach yards in which the cars are cleaned and replenished are under strict sanitary supervision by employees of the railroads assigned to that duty. In addition, the yards are inspected at intervals by public health service officers, who coöperate with the railroad officials in devising and maintaining sanitary measures. While this work is carried on behind the scenes, so to speak, it is essential for purposes of health. Cars which are watered, replenished with food supplies, and renovated amid insanitary surroundings, might readily be the means of conveying disease to their passengers.

Not all of the work carried on for the purpose of preventing the interstate spread of diseases is confined to activities related to railroad trains and vessels. The regulations provide, for example, that foodstuffs which are especially subject to contamination shall not be transported from one state to another unless produced and handled in such a manner as not to render them liable to become agents for the interstate spread of disease.

HOSPITAL NEWS

State Hospitals Overcrowded

A state hospital problem comparable to the penitentiary question was placed before the citizens of West Virginia recently by the state board of control. In a statement which described both overcrowding and financial conditions at the three state institutions for the insane as worse than at any time in the history of the state, the board said the only solution to the enigma would be "an adequate bond issue or increasing revenues to the state, resulting in appropriations."

The outline of conditions at the Huntington, Spencer, and Weston state hospitals was made following a published statement of Dr. L. V. Guthrie, superintendent of the Huntington hospital, in which he said a real emergency existed there and that he was "whipped to a finish for want of money."

In summarizing the situation, the board's statement, which was made by all three members—President H. N. Bradley, F. W. McCullough, treasurer, and James S. Lakin—said:

"At the Huntington state hospital we have neither funds nor the room with which to maintain it. This condition also applies to the Weston state hospital, whereas at the Spencer state hospital we have sufficient money for the biennial period but we do not have the room. This suggests additional buildings at Spencer and Huntington."

A $200,000 addition to the Weston hospital is soon to be completed, but the board said it would be filled "almost immediately after completion." The first unit of the West Virginia training school for the feeble-minded, at St. Marys, to house eighty patients, will be ready within a year.

The board further said it was "not unmindful of the number of cases in county almshouses suffering from senility," but that it was at a loss to relieve the conditions, expressing the belief that such cases should be cared for by the counties in order that adequate room might be available in the state hospitals for the "acutely insane." In this connection the board recalled instructions of October 7, 1929, limiting admission to the institutions to only the "acutely insane," and to orders for the Huntington hospital to admit only pay patients "in order that the difference between the appropriation of $60,000 per annum and the actual cost of $225,000 per annum mght be recovered from those willing to pay."

Grafton Wants Hospital

A campaign to build a new hospital in Grafton was started at a mass meeting recently held in that city and attended by both the city and Taylor county officials and by physicians and representatives of civic and service organizations. A levy of $100,000 would be needed to construct the hospital, and it was announced that the county levying board could arrange a ten-cent levy by cutting down on other items. Mayor King said that the Grafton city hospital was operating at a profit, but that it was overcrowded and inadequate and would soon have to be replaced.

What a Hospital Means to Me

My excuse for this short paper tonight is that I was asked to prepare an article dealing with what a hospital means to me, a general practitioner in a small town in which there is no hospital and doing both town and country practice. We have access to several hospitals, all of which are on the hard roads and can be reached within a reasonably short time by motor. This convenience is much better than it was a few years ago, when all travel was dependent upon the railroads. I have spent many anxious hours waiting for the train and not knowing when an appendix would rupture, an ectopic case begin to bleed, or a peritonitis case collapse.

More and more I find that people choose their hospital and their surgeon just as they do their own family physician. There is still in the minds of many people the idea that a hospital is comparable to a "butcher shop," and place of "last resort," and that they prefer to die at home rather than go to one. Much of this mistaken idea is disappearing, I am pleased to say; at least among the better informed classes; and it behooves all practitioners, as advisers and teachers, to completely eradicate this view from every mind. The public needs to be taught the advantages of a well-conducted hospital.

When we speak of a hospital, our first thought in many instances is centered on surgery and operations, and as most practitioners are not surgeons their interests do not go further. There is much more than surgery in a well-equipped hospital.

My idea of a well-balanced hospital is as follows: At its head should be a man well informed along medical diagnosis, not a fee-splitter, and a capable surgeon. It should have a laboratory sufficient to do all practical tests, and a competent medical director. There should be a good x-ray unit and a person capable of interpreting the results. There have been

great strides in the uses of x-rays in the past few years, and, to my mind, this is one of the most important departments of the hospital.

As a general practitioner, the hospital is quite indispensable to me in all surgical conditions, surgical obstetrics, puerperal and eclamptic states, and other serious maladies too numerous to mention. Even what may be termed minor operations are so much better handled in a hospital. In the more serious diseases coming under the head of internal medicine, the facilities of a hospital are very necessary not only in working out a complete diagnosis but in instituting the proper treatment at the start. There are a number of conditions that, to my mind, should be diagnosed early and proper treatment instituted before the disease has gained too strong a foothold or has damaged the patient to such an extent that irreparable damage results. A few such instances are in suspected tuberculosis, toxic thyroid, diabetes, nephritis, focal infections, the anemias, and many others. It is almost impossible to properly treat a diabetic without soliciting hospital facilities until the patient's condition is thoroughly understood, his glucose tolerance known, and the proper dietary regimen instituted. There are many "nervous" conditions cured by the simple means of removing the patient to a hospital where home sympathy is done away with, and the environment of strangers substituted.

In conclusion, my thoughts may be summed up in part by the little girl's definition of a lie: "It is a very pleasant help in time of need."—DR. C. B. WILLIAMS, Philippi. From the *Bulletin of the Davis Memorial Hospital.*

Accurate Orders to the Nurse

Coöperation between the medical and nursing professions and efficiency in the relationship which exists between the two are necessary to insure the sick proper care and treatment.

Occasionally the physician, in his hurry, fails to be specific enough in his orders to the nurse, permitting a chance for errors in the prescribed treatment. The physician can not consider the nurse a mind-reader. The nurse in turn must be careful to follow closely the orders issued by the attending doctor.

Some suggested points to be remembered by the physician as well as the nurse, on cases either at home or in hospitals, were listed as follows in a recent issue of the *Pennsylvania Medical Journal*:

1. Write all orders, and in ink; verbal orders to be given only in emergencies.
2. Write legibly. The nurse should not be placed in the position of having to guess at what has been written.
3. In writing for the administration of drugs, it is preferable to write the official name of the drug in full and not use chemical formulas, synonyms, or abbreviations.
4. In outlining special treatment, make sure the nurse understands what is required to be done.
5. Anticipate, so far as possible, what may be required before the next regular visit, so that the nurse can dispose of many details in the morning hours.
6. Cancel, in wrting, all previous orders that are to be discontinued.
7. Do not write unnecessary orders.
8. Remember that the nurse desires to carry out, or should, orders as written; so write them so that they can not be misconstrued.—*Ohio Medical Journal.*

FROM OTHER JOURNALS

The Responsibility for Leadership

Medical practice is entering a period of adjustment to present-day standards of efficiency, similar to that taking place in many lines of human endeavor. Industry, insurance companies, and the general public are demanding:

A wider application of modern knowledge of hygiene, so as to cut down the tremendous annual loss due to preventable disease and premature death.

More businesslike and economical methods of caring for the sick.

A more universal distribution of modern methods of diagnosis, so that they will be available to a larger proportion of our population.

If these requirements are met through plans devised by timely and broadminded leadership from within the profession, we have nothing to fear. If we lag behind and allow economists, who are interested only in the ultimate result, to work out the methods of bringing about the desired change, we may find the medical profession in an unfavorable position similar to that found in some foreign countries.

The responsibility for the solution of these problems should not be placed on the shoulders of our medical society officers alone. Every physician

should consider it his duty to give some time and thought to this important subject. Many of the difficulties are purely local, and can best be corrected by local men. By making as many contacts as possible with the lay leaders in their communities, they can determine what the needs and desires of the citizens are. By giving advice, based on medical knowledge, they can guide the policies of health and welfare workers along lines which will benefit the people and at the same time be fair to the local medical profession.

There is, in every county in Wisconsin, a county health committee, consisting of the juvenile judge, the chairman of the county board, the county superintendent of schools, the deputy health officer, and a woman appointed by the county board. Its duties are to direct the work of the county nurse and supervise general public health and welfare work in the county. The local medical profession, which is most interested in and conversant with health conditions and problems in the community, is not and can not be legally represented in this committee. However, a representative member, or committee of members, of the county medical society can meet with this board in an advisory capacity, to their mutual benefit.

Similar committees can be appointed to meet with health departments in larger cities. Where this has been tried the committees have been cordially welcomed by the county health boards and the health departments. Other similar points of contact should be sought and developed as occasions arise.

By these methods greater coöperation is secured by public health agencies from the medical men and their work can be carried on more efficiently; the public is saved from exploitation by sincere but overzealous health and welfare workers, and the legitimate rights of individual physicians can be protected.

The public will continue to look to the medical profession for leadership in health matters so long as that leadership is sincere, efficient, and fair to all concerned. At a time like this we must put forth every effort to continue to maintain this leadership and merit this confidence.—A. H. H. in *Wisconsin Medical Journal.*

Medical Economics

The organization of men into groups for their mutual protection or gain dates back into very ancient times. Organized activities have varied with changing conditions and advancing civilizaton, but the underlying principles animating all social organizatons have remained unchanged, because human nature remains basically the same today as it was in the beginning.

The congestion of peoples into great populations of both rural and urban types, the growth of industrialism, the expansion of knowledge, the figurative contraction of distances by virtue of our modern means of quick communication, have given rise to tremendous social problems which are challenging us for solution.

Society is striving to understand the conditions in which it finds itself, is courageously attempting to untangle the maze of conflicts, is seeking to find the way to establish social, industrial and economic justice. Manifestly, society as a whole can not act intelligently on each of the great multiplicity of problems to be considered; therefore, quite naturally, groups with common interests have formed themselves into organizations for the purpose of studying their own needs, their relations to other groups, their position in relation to society as a whole, the best means of serving themselves, each other, and that which they themselves compose—the public.

Thus we have financial organizations, labor organizations, industrial and agricultural groups, social welfare, child welfare, lay health bodies, and what not. It is small wonder that, in the earnestness of their activities, they cross paths or seem to, and often find themselves in conflict with each other.

The professional and scientific bodies have been the playthings of the other groups to a very considerable extent. This fact has touched the medical profession more directly, perhaps, than it has the others. The old, austere spirit of professional aloofness has long held sway within our ranks. Even yet there are many of us who feel that it is beneath our dignity to enter into active solution of medical economic problems, except as individuals. However, the field men of medicine—they who are at the bedsides of the sick and injured—while accepting themselves as men of science, none the less realize that they earn their living by caring for the sick. Their professional spirit gives them primal interest in helping their patients. Their pecuniary interest is secondary. The professional spirit cries out for untrammeled scientific freedom. The spirit born of ancestral independence of action likewise cries for freedom. It instinctively rises rebelliously against economic thraldom.

Our purely scientific organizations found it necessary to add to their activities a phase which we are pleased to call medical economics. This field has broadened until we now find that the Minnesota State Medical Association has at least eleven committees engaged in studying our problems in relation to the public, to various technical services, to exogenous groups of healths, to the procedures of the department of public health, to public health education, and to other closely related matters.

The great swing and scope of education got under way while we slept, so to speak, or worshiped at the shrine of science, wholly unmindful of what was happening. Suddenly we began to realize that the medical profession was losing its one-time position of honor and prestige. Because of our self-centered and narrow attitude we were relinquishing our function as public educators and to just that extent failing in our professional duty. Whereas a generation ago the doctor worked as an individual, was professional advisor, political counsellor, general all-around sage and burden-bearer, now the scenes had changed and collectivism had come to be the mode of action. Soon we found an impatient public was carrying on its own system of health propaganda and education. Evidently, if we were not going to do it the public would do it themselves, though not always to the best advantage but certainly to our disadvantage.

Then we woke up! The result has been one of splendid accomplishment. Today we have an aroused profession, aroused to its public responsibility, working organically as a unit. It is taking the lead as an organized body in all of the many movements in which medical lore can be of service. It no longer stands idly by while its larger work is being mismanaged by others. It is guiding, wisely directing, helping. It is thrusting aside the ill-informed, less than half-trained, self-seeking group who had the pretensions to teach the laity. Such were accepted for a time on many occasions by lay organizations, but only because we ourselves were not available.

Organization has redeemed our honor. We should rejoice. But organization and the work it entails which devolves upon us is costly. That is why state society dues have been raised. That is why, having placed our shoulders to the wheel, we must keep them there, lest we step back into the quagmire of dishonor.—S. H. BOYER, President of the Minnesota State Medical Association, in *Minnesota Medicine.*

Ethics of Advertising

The printing press has no doubt done more for civilization than any other one factor. The newspapers of today generally criticize the medical profession for living under the old oath of Hippocrates—for not becoming modern and using the tremendous power of advertising through the press. They claim that medical advertising should undergo a radical change—that newspaper advertising educates the people as well as keeping them informed on every topic, and brings returns in dollars and cents.

The amount of money spent in advertising through the press of this country exceeds twenty-five million dollars per annum, and 600,000 people are employed in this gigantic scheme. Charles Stewart, in "The Tragedy of Waste," calls attention to the fact that newspaper advertising was started by the PATENT MEDICINE INDUSTRY. He states that it does not create any increase in capital, but simply changes the money from one individual to another.

The medical profession has always realized that medical advertising is not for the best good of the public. It is purely a waste of money. They have closely observed that the immense amount of money spent in the fostering of schemes by the patent-medicine men has not been to the best interests of the commonwealth. *It has never helped and never will help to take care of our sick and injured clientele.* Medical affairs are of such an intricate nature and differ so much from other matters that about all the advertiser can claim to do is to cure his case. Again, advertising in a medical way is apt to call attention to the extraordinary results that are being acheved, too often in incurable diseases, which usually proves disastrous physically and financially, and the patient must also bear the extra expense of the advertisement. Newspaper advertising never calls attention to the pitfalls, but only to the bright side of the treatment. In other words, we have learned from the advertisements of the patent medicine men and the quacks that they are not always reliable and that their business is not on the market for the good of humanity.

There are certain things relative to public health and sanitary conditions that the public should know and can understand, such as vaccination against smallpox, diphtheria, typhoid fever, etc., whether it comes from the newspapers, the rostrum, or the pulpit. The medical profession is always ready and willing to coöperate with the press in anything that is for the good of the commonwealth. We have always felt that if we were able to cure certain

diseases that knowledge should be made public to the profession the world over, so that each and every individual would receive the good coming from such treatment. In other words, the product of medical science should not be copyrighted or patented, but should be used for the good of mankind.

The ideals of the medical profession have always followed the teachings of the Hippocratic oath, and the individual that strays from this is not looking after humanity. The only advertising to the public that ethical medicine believes in is that which teaches them ideals, or advancement of medical science along general lines of preventative medicine, or anything that stands for science, and when the advertisements are used for the individual physician or surgeon, ethical medicine is straying from the Hippocratic oath. The power of the press wields a mighty influence with the public, but in medical matters it is too often just an illusion read in the negative; just as a drowning man will grab for a floating straw.

Often conditions arise in every community where individual organizations, or physicians of great wealth or backed by influence, pay little attention to the ethics of the medical profession; but they are prone to eventually come to the realization that unethical advertising does not pay. The price of medical ethics is worth more to the individual doctor than big business influence or a gain of paltry dollars. During the past year a very prominent physician of Chicago, Dr. Louis E. Schmidt, lost his membership in his county, his state, and the A. M. A., on account of unethical advertising. He has fought in vain, with strong influence brought to bear, to regain his membership and the honor of being restored to the three societies above named. The doctor has discovered, to his sorrow, that "Verily, there are things beyond price."—*Compend of Medicine and Surgery.*

Chain Store or Department Store Medicine

State operation and state control of medicine ruined medical practice in Germany and has given the people of that country the worst medical service administered in any civilized country in the world.

When an institution such as a university or a corporation enters into the practice of medicine, as is the case in many instances at the present time, there come up certain points of interest to the medical profession.

A university is endowed for education, research and scholarship, and when it enters the practice of medicine it is dealing unfairly with the private practitioner. "Unfair," because this institution has the enormous advantage of reputation and size to attract patients; "unfair" because of endowments it is able to practice medicine at much lower rates than must prevail in private practice; "unfair," because it is the only department of the university which even considers entering into the business which it aims to teach; "unfair," because, even if it charges large fees, its prestige would make it an impossible competitor with the private practitioner.

Much is being said by economists about only the very wealthy and the very poor getting the maximum of medical service, and so leaving the great middle class unable to procure the so-called maximum service. This statement is not accepted by thinking medical men. We believe that the private practitioner is giving good service and sees that his patients get what they need at a price they can afford to pay.

There is a strong tendency at the present time to systematize or machine out the most desirable thing in the practice of medicine, and that is the very personal contact of physician and patient. This personal contact can not be removed without jeopardizing the best interests of the physician, the patient, and the public. Chain store or department store medicine is detrimental to the welfare of both the physician and the public.

It is important, under the present standard of ethical procedure, that groups practicing medicine must adhere to the same ethical principles as regulate individuals. Because of their size and influence, corporations are in no way relieved of the ethical responsibility that applies to general practitioners. If the staff of corporations engaged in the practice of medicine fails to recognize this fundamental principle, then all the men connected with the staff should be amenable to the same discipline as if they were individual practitioners.

In Illinois a lay corporation can not practice law and the bar association sees that it does not. With our legislature composed largely of lawyers, we fail to understand why the legislature is not willing to throw the same safeguards around the medical profession that it grants to the legal profession.—CHARLES J. WHALEN, Editor, *Illinois Medical Journal.*

Improvement in Preventive Medicine

The injustice and absurdity of criticism often hurled at the medical profession by cultists and other

groups who can see no good in the methods of scientific medicine is emphasized in a recent report made to the United States Public Health Service by the New York City Department of Health.

In calling attention to the fact that the death rate in New York City has dropped from 30 per 1,000 population to 12 per 1,000 in the past fifty years, the New York City Department of Health report said:

"Those of us who remember the late Abraham Jacobi will perhaps recall his graphic account of medical work sixty years ago. In those days, as Jacobi often reminded his audience, a physician counted with confidence on a considerable number of severe cases of scarlet fever and diphtheria to carry him through the winter, and when these were over the many cases of cholera infantum, malaria, and typhoid fever usually assured the continuance of a lucrative practice during the summer and fall.

"Those were the days when a population of less than 1,500,000 each year witnessed over 1,200 deaths from scarlet fever, some 1,500 deaths from diphtheria, 400 to 500 deaths from cholera morbus, 500 deaths from typhoid fever and an equal number of deaths from malaria. How conditions have changed! With a population four times as great, scarlet fever now causes less than 100 deaths a year, diphtheria about 600 deaths, cholera morbus about 1,000 deaths, typhoid fever 100 deaths, and malaria practically none.

"In contrast to conditions fifty to sixty years ago, when the death rate in this city was over 30 per 1,000, we now have a death rate of 12. It is record of which the medical profession can well be proud. It shows that, despite all the carping critics now and then say about the work of physicians, the fact remains that the medical profession stands out practically alone as the one striving constantly to wipe out the conditions on which rests its livelihood."—*Ohio State Medical Journal.*

Fake Antiseptics

The campaign against fake antiseptics has been so effective that today food officials of the Food, Drug and Insecticide Administration, United States Department of Agriculture, state that labels appearing on preparations of this kind in interstate and import commerce are reasonably accurate. The Administration warns, however, that the labeling upon the package itself and the advertising in circulars, posters and periodicals is a different matter. The federal food and drugs act does not control such advertising.

Constant surveillance is kept over the labels of new antiseptics by the department to catch any fake or misbranded preparation as it appears. Of more than 1,000 supposed antiseptic preparations examined by government chemists and bacteriologists during the past three years, less than 100 bore labels to which no exception was taken by officials. Two preparations were reported as containing live bacteria and many of the others were found not to kill or prevent bacterial growth. Many effective antiseptics were found to carry unwarranted curative claims on the label.

Because of the unwarranted advertising used by manufacturers of fake antiseptics, the Department of Agriculture has issued a booklet, "Fake Antiseptics and the Law." This exposes the methods of the fakirs and tells how to beware of fake preparations. The booklet is available through the Food, Drug and Insecticide Administration, United States Department of Agriculture, Washington, D. C., and will be sent free on request.—*Missouri Medical Journal.*

Deceptive Advertisements

Under the guise of a title suggesting a scientific publication and camouflaged by an appearance which would make the physicians unaware of the type of publication, the notorious Koch of Detroit has flooded this section of the country with a pseudo medical journal which is just about the extreme limit of audacity. It may be that an occasional physician of repute is not aware of the so-called cancer cure elaborated by this man Koch. If not, it might be well to warn him that the Koch laboratories are putting out a secret nostrum spoken of as an synthetic toxin for the cure of cancer and its allied diseases, which has been totally and repeatedly refuted by scientists and thinking physicians. The man himself has been expelled from the medical organizations of organized medicine. Descending from what he originally claimed was a scientific preparation, he has come out boldly with many schemes to advertise a product of which the claims are unfounded. The rewards that come to he who is sufficiently unethical to advertise, and low enough to advertise a secret substance, may be inferred from the fact that 150,000 copies of this journal are published, according to the notice made on page 23. It pays to advertise; assumedly the expense of printing and mailing this journal must be enormous, but

it must pay or the astute business men of the Koch concern would not countenance such expenditures.

Physicians throughout Louisiana and Mississippi who are not familiar with Koch's efforts to achieve fortune through the suffering of others are warned of the character of his preparation. The majority of those who do know of this "cancer cure" can not help but feel insulted that their intelligence and integrity should be considered so low that they would pay any attention to such a journal as has been recently sent through the mails. Do not consign it to the wastepaper basket; throw it in the garbage can.—*New Orleans Medical and Surgical Journal.*

Current Problems of Medical Education

All true education is self-education. There is a distinct shift in many medical schools now toward placing greater responsibility on the student for his own training, in an effort to emphasize learning by the student in distinction to teaching by the faculty. It is in the direction of individualizing instruction and providing opportunities for learning, for self-development, and for independent work. This new emphasis is illustrated by the breaking down of the rigid class system; the discontinuance of uniform time and course schedules; the introduction of small teaching sections; personal contacts between students and instructors; provision for reasonable free time for reading, individual work, and leisure; a reduction in the amount of lecturing, and the providing of opportunities for students who desire and are competent to do independent work. The aim is to develop minds capable of finding and appraising evidence and drawing conclusions based on sound reasoning, which will provide a permanent intellectual equipment, resourcefulness, and sound habits, as well as methods of study that will permit the student to continue his own self-education throughout his entire professional life, a continuing education which has already been emphasized as the most important factor in providing an adequate medical service for the community.—W. C. RAPPLEYE, *Journal A. M. A.*, 94: 916, 1930.

CURRENT COMMENT

More State Medicine

According to a recent news article released by the *Chicago Tribune* press service, a plan has been adopted in France whereby a man of small income will secure his medical and hospital care free of charge. It is called "social insurance," another name for state medicine. The article states:

"From now on, small wage earners in France will not have to pay doctor or hospital bills and they will be fully protected against old age, death, and unemployment.

"This is the result of the passing in the senate and the chamber of deputies of the long-discussed social insurance bill. According to the bill, workers earning less than $700 annually—a good average salary in France—will be obliged to contribute a small percentage of their salaries to the monthly social insurance fund, the employers and the government putting up a like amount.

"French doctors have bitterly opposed the bill, charging that it makes them virtually salaried employees of the state. Due to their opposition, the bill, putting into effect the original measure passed in 1928, has been delayed two years."

The Brinkley Affair

The Brinkley affair in Kansas has recently been brought to a head through the efforts of the *Kansas City Star* and Brinkley is now up before the board to show cause why his license to practice medicine should not be revoked. His case has been carefully handled, because of his radio broadcasting station and his various methods of creating public opinion. Commenting upon the Brinkley cases, the *Journal of the Kansas Medical Society* has the following to say:

"Now that the complaint against Brinkley has been filed and he has been regularly summoned to appear before the State Board of Registration and Examination to show cause why his license to practice should not be revoked, the editor is at liberty to spill all the beans he wishes. However, much of what could be said is now past history and the newspapers have already made it public.

"It is the most natural thing in the world that the members of the society should become impatient with what seemed to them unnecessary indolence in the disposition of such an intolerable situation.

"The wisest council was against publicity until such time as the preparations for procedure were completed. It seemed to many that there was sufficient evidence of fraud and gross immorality to revoke the license of any practitioner—of any other practitioner, at least. But this man not only had friends in high places, but he had resources for publicity by which he was able to form public opinion to his needs. A man of less notoriety, less

keenly alive to the precarious position he held, and less strongly defended by the religious, political and commercial influences his foresight had created, would have been hailed before the board and deprived of his license in short order. But in this case it was very essential to be sure that the action of the board should stand the test of the highest courts, for it was conceded that the action of the board would be so contested. Since in such a case the board must be, or is supposed to be, defended by the attorney general, it was regarded as of considerable importance that before any action was begun he should be satisfied of the extent, nature and sufficiency of the evidence. Perhaps it was one's impatience that led one to believe the attorney general was too hard to satisfy.

"Comparing the evidence already accumulated with the evidence upon which other licenses have been revoked, there is hardly room for the slightest doubt how the board will act in the matter. After that we will perhaps have an opportunity to see what attitude the attorney general will take. A great deal of credit should be given the *Kansas City Star* for its exposure of the practices at the Brinkley hospital, and it is freely conceded that the *Star* was largely responsible for the final yielding of the attorney general to the demands for immediate action.

Medical Committee of New York

Dr. Iago Galdston, secretary of the Greater New York Committee on Health Examination, has just forwarded to the JOURNAL a copy of the committee's report, an excellent magazine-size publication called *For Health*. The committee represents the medical societies from the counties of Kings, Queens, Richmond, and the Bronx. The report of the committee seems to be a splendid piece of work.

The report itself consists of fifty-six pages and deals with thirty-two different subjects. The report is profusely illustrated with drawings, photographs and charts, and takes up successful and unsuccessful campaigns, newspaper publicity, campaign propaganda, and all the various activities that pertain to a health-examination program. The mechanical workmanship on the report, the printing and the paper, are of the best.

With these encomiums and tributes paid to the committee and its work, it is rather discourteous to do an about-face and take the committee to task upon a minor issue. The issue in question is the nature of the advertising matter that appears in the report. Among the products and companies allowed to advertise in the report are Listerine, Fellows' Syrup, Antiphlogistine, Gray's Glycerine Tonic Compound, Sal Hepatica, and Pineoleum. These advertisements are but a minor issue in a splendid report, but, because of the nature of the advertisements and the character of the products, the issue becomes a major one in spite of itself.

The report of the committee on health examination is good; the advertisers given space in the report are bad. Which are we to accept? If we accept the report, what about the advertisers? If we accept the advertisers, what about the report? It looks like a bad way of doing business, and it comes right back to the same problem that confronts the *New York Medical Journal*. The New York journal, one of the best scientific medical publications in this country, completely loses its self-respect in the maze of unethical and quack advertising that is permitted between its two covers.

The WEST VIRGINIA MEDICAL JOURNAL publishes one of the largest state journals in this country, and its advertising rates are perhaps as low as, or lower than, the rates of any other state medical publication. In spite of this, the West Virginia journal lays aside a comfortable surplus each year and does not accept the advertising copy of any firm or institution unless approved by the American Medical Association. In other words, the WEST VIRGINIA MEDICAL JOURNAL is not paid for by the quackery it condemns.

We point this out, not with the idea of boasting, but simply to ask why our New York friends can't do the same thing.

OBITUARY

Dr. Frank P. Beaumont

Dr. Frank Preston Beaumont, 65 years of age, died at his home in New Cumberland on May 8, 1930, following an illness of ten days' duration. He was one of the oldest practitioners of medicine in Hancock county, having served that community for 44 years. He was born in New Cumberland on August 5, 1865. Both his father and grandfather before him were physicians, and his son, Dr. Dudley Beaumont, is now engaged in active practice.

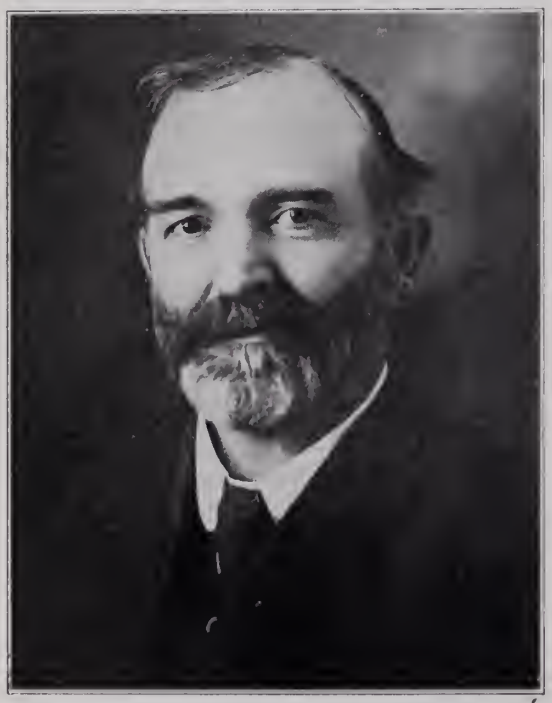
Dr. Beaumont was graduated from the Eclectic Medical College at Cincinnati, later taking postgraduate work in New York City. He began the practice of medicine at New Cumberland in 1887.

He is survived by his wife, three sons, and one daughter. Three brothers and three sisters also survive. Funeral services were conducted from the late home on May 10, and interment was made in the family burying ground.

GENERAL NEWS

Elections at White Sulphur

Dr. C. H. Maxwell, of Morgantown, was elected president of the West Virginia State Medical Association at White Sulphur Springs on May 22, 1930. He will take office on January 1, 1931, succeeding Dr. Walter E. Vest, of Huntington. The other officers of the Association for 1931, elected at the White Sulphur meeting, were Dr. Albert H. Hoge, of Bluefield, first vice-president; Dr. H. L. Goodman, of Ronceverte, second vice-president, and Dr. T. M. Barber, Charleston, treasurer.



DR. CYRUS HAYMOND MAXWELL
Morgantown
THE PRESIDENT-ELECT

Dr. Cyrus Haymond Maxwell was born in 1863 and is now sixty-seven years of age. He was graduated from the Gross Medical College at Denver, Colorado, and was licensed two years later to practice medicine in West Virgina. He has been in actual practice for thirty-three years, and for more than thirty years in this state. Dr. Maxwell is spoken of as the "grand old man of Monongalia county," and through study, hard work, and a genial personality he has risen to the top of his chosen profession. In recognition of his long years of service to the medical profession in this state, and in recognition of his ability as a leader, he has been honored with the highest gift within the power of the Association to bestow.

DR. ALBERT H. HOGE
Bluefield
VICE-PRESIDENT-ELECT

Immediately following the election of officers, the election of six new councillors was taken up. Dr. C. W. Waddell of Fairmont, Dr. Roy Ben Miller of Parkersburg, and Dr. R. H. Dunn of South Charleston were the only councillors elected to succeed themselves. Dr. T. K. Oates, of Martinsburg, was elected to fill the vacancy brought about by the election of Dr. Maxwell. Dr. George Snyder, of Weston, was elected to succeed Dr. John Folk, of Bridgeport, and Dr. M. T. Morrison, of Sutton, was elected to fill out the unexpired term of Dr. S. S. Hall, of Fairmont, resigned. Dr. A. G. Rutherford, of Welch, was elected to succeed Dr. J. Howard Anderson, of Hemphill, having been placed in nomination by Dr. Anderson. By virtue of a new amendment to the constitution, Dr. W. L.

Vest, of Huntington, will become chairman of the council for the year following his term as president.

Dr. F. C. Hodges, of Huntington, was elected as chairman of the committee on scientific work. The other two members elected to serve on this committee were Dr. Luther C. Davis, of Fairmont, and Dr. R. D. Roller, of Charleston. Dr. W. S. Fulton, of Wheeling, and Dr. G. G. Irwin, of Charleston, were elected president and secretary, respectively, of the section on surgery. Dr. S. S. Hall, of Fairmont, and Dr. G. A. Smith, of Montgomery, were elected president and secretary, respectively, of the section on eye, ear, nose and throat. The officers of the two sections work with the committee on scientific work.

Among the other officers selected at the White Sulphur meeting were Dr. James R. Bloss, of Huntington, as delegate to the American Medical Association, and Dr. W. E. Vest, of Huntington, as alternate. Clarksburg was selected as the 1931 convention city.

Constitutional Amendments

The following changes, amendments and additions have been officially passed as amendments to Article IX of the constitution of the Association, to read:

"Section 1. The officers of this association shall be a President, two vice-presidents, an Executive Secretary, a Treasurer, twelve Councillors to be elected as provided in Section 2, and two Councillors-at-large, who shall be the retiring President and his immediate predecessor.

"Section 2. The officers, except the Councillors, shall be elected annually. The terms of the Councillors shall be for two years, one-half being chosen each year. No Councillor shall be eligible to succeed himself after four years as Councillor, but may be elected after two years' absence from the Council. All these officers shall serve until their successors are elected and installed.

"Section 3. The officers of this association shall be elected by the House of Delegates on the evening of the first day of the annual session, immediately following the President's address.

"Section 4. The retiring President shall be Chairman of the Council for the year following his term of office, and shall not be eligible thereafter for any elective office of the association except for delegate to the American Medical Association, Board of Publishers, or Scientific Committee member.

"Section 5. The President, the two Vice-Presidents, and the Treasurer of this association shall be members of the House of Delegates by virtue of their respective offices."

Gorgas Essay Prize Awarded

President Hoover, on May 12, 1930, awarded the Charles R. Walgreen prize of $500 for the winning essay in the second annual Gorgas Memorial Essay Contest to Pauline Lodge, of Lakewood, Ohio. Miss Lodge is a senior in the Lakewood high school.

The subject of this year's contest was "The Gorgas Memorial: Its Relation to Personal Health and the Periodic Health Examination," and over five thousand essays were submitted by high school students from all parts of the United States.

A state prize was awarded for the best essay in each state, and from these papers the national winners were selected by a committee of judges composed of Dr. Hugh S. Cumming, surgeon general, United States Public Health Service; Dr. William Gerry Morgan, president-elect, American Medical Association; Dr. William John Cooper, United States commissioner of education; and Dr. Allen B. Kanavel, regent, American College of Surgeons.

Miss Lodge received, in addition to the five one-hundred-dollar bills handed to her by President Hoover, $250 for travel expenses to Washington for the presentation. Other prizes were as follows:

Second national prize of $250 to Canascia Duncan, of Omaha, Nebraska.

Third national prize of $100 to William Lennon, of Willimantic, Connecticut.

Fourth prize, honorable mention to Helen Dale, of Point Loma, California.

Fifth prize, honorable mention to Owen Edgar Duffy, of Miami, Florida.

The state prizes were $20 to each winner, and to the writer of the best essay in each of the competing high schools was awarded a bronze medal.

Buffalo Society Hears Dr. Hall

Dr. Harry M. Hall, of Wheeling, past president of the West Virginia State Medical Association, was the principal speaker at the April 22 meeting of the Erie County Medical Society at Buffalo, New York. Concerning his address, the *Buffalo Evening News* had the following to say:

The medical profession should emancipate itself from all outside influences and should organize into a strong, militant body to fight interference with medical practice by big business, laymen and legis-

lators, Dr. Harry M. Hall, of Wheeling, W. Va., told about 150 members of the Erie County Medical Society at a meeting in the Museum of Science building Tuesday evening.

Dr. Hall lauded the proposed Gimbrone Industrial Medical Bill, giving the employee the right to select his own physician in the event of disability, instead of being forced to accept one selected by his employer. He deplored the fact that jurisdiction over workmen's compensation was in the hands of laymen and not physicians.

State medicine was hit by Dr. Hall. "State medicine is not particularly desired or thought of by the laity," he said. "I could count on my two hands all the lay citizens who ever broached it.

"I do not believe the American public is conscious of its existence. I do not believe they want it or would tolerate it if they had it.

"I believe, if it ever comes up and we are solidly organized, we can appeal to the great mass of voters and stop it.

"But it can come only in two ways. Agitators, politicians (scenting the patronage), and magazine writers painting it up in fine colors that are scarcely becoming to its character.

"These three divisions of the populace are ever on the alert to stir up new activities. They hew it with no idea where the chips will fall nor what a fine old tree they are hacking. This may bring about a vote of the people. If we are inactive or divided it will go through.

"Already it has been introduced in the Massachusetts legislature by a person who, if memory serves me correctly, once advocated it in the *North American Review*. His idea was to operate it as medical services in the Navy are conducted, coupled with the way teachers are hired in the public school system. That is, you would go to your district doctor in the district building as the children go to their teachers at school."

In closing, Dr. Hall said that an entrance into politics would eliminate most of the perplexities confronting the medical profession.

"The day is past for giving those dignified, intelligent speeches of enlightenment we used to address to lawmakers. From now on, it is straight politics for us. If each one of us would make it obligatory on himself to influence ten votes, and instruct these ten voters to get more, and we would join the dentists and nurses, we would be able to get recognition. As it is, the politicians do not see us; but the day is coming when they will see us, and in a very forcible way."

Dr. William T. Getman presided and introduced Dr. Hall. The speaker was the guest of honor at a dinner in the Hotel Statler preceding the meeting.

Civil Service Examination

The United States Civil Service Commission has announced an open competitive examination for Associate Medical Officer (pathology). Applications will be rated as received by the Civil Service Commission at Washington, D. C., until June 30, 1930. The commission calls attention to the fact that eligibles are required for filling vacancies in positions of associate medical officers (pathology) in the U. S. Public Health Service at Ellis Island, New York, and Detroit, Michigan.

The entrance salaries range from $3,200 to $3,700 a year. Applicants must have been graduated with the degree of M.D. from a medical school of recognized standing, and, in addition, must have had at least two years of specialized study or practice in human pathology.

Full information may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the United States Civil Service Board of Examiners at the post office or customhouse in any city.

Medical Defense Fund Reinstated

The medical defense fund of the West Virginia State Medical Association was officially reëstablished by the house of delegates on Thursday morning, May 22, 1930, through an amendment to the Association by-laws. The new amendment is known is Chapter XI and is published below in full. Chapter XI has been restored to read:

Section 1. The Medical Defense Fund of the West Virginia State Medical Association is hereby reëstablished and made retroactive to January 1, 1930.

Section 2. The Committee on Medical Defense shall consist of six members of the Association, to be appointed each year by the incoming president, who shall be *ex-officio* chairman of the committee. One member shall be selected from each Councillor District.

Section 3. When a member of the Association is sued for malpractice, he shall employ such attorney or attorneys to defend his case as he may see fit, and at his own expense, except as hereinafter provided. If the assistance of the Medical Defense

Committee is desired, he shall at once forward to the member of the committee from his district a written statement from the secretary of his county society that he is a member in good standing and has paid his dues as hereinafter provided, a full report of the case, and thereafter he shall furnish the committee with such information and copies of such records, pleadings, etc., as may be requested.

Section 4. It shall be the duty of each committeeman to investigate all claims for malpractice against a member of the Association in his district that may be brought to his attention, and if, in his judgment, the case is one worthy of defense, he shall assist and coöperate with the member sued in the defense thereof. If a committeeman holds a case to be one not worthy of defense, the member sued may appeal to the full committee, should he so desire.

Section 5. In each case deemed worthy of defense, the committeeman shall, without delay, arrange a conference with the member sued and his attorney, and shall render them such assistance in defending the case as he can. When he deems a case to be of sufficient importance, the committeeman shall refer it to the attorney of the Association hereinafter referred to for his assistance and advice. It shall particularly be the duty of the committeeman to assist in having present at the trial such medical or expert witnesses as may be needed.

Section 6. A committeeman may expend the sum of $100.00 in any one case in securing the attendance at trial of necessary medical or expert witnesses; and, with the consent of the Medical Defense Committee and the approval of the Council, a sum not to exceed $500.00 may be expended in any one case of particular importance to the medical profession. In any case in which the Medical Defense Committtee is unanimously of the opinion that the litigation will be a financial hardship on the defendant, he may be allowed from the fund for attorney's fees a sum not to exceed $100.00. A medical or expert witness who is compelled to leave his county or home town in order to attend a trial shall be allowed a sum not to exceed $25.00 a day, and hotel and traveling expenses; and a committeeman shall receive the same allowances for attending trials away from his county or home town.

Section 7. The Council shall employ a competent attorney for this Association, upon such terms as may be agreed upon between them, and, when deemed necessary, cases of unusual complexity or more than ordinary importance may be referred to him by the Medical Defense Committee or the members thereof for his advice and assistance in the defense thereof.

Section 8. The Medical Defense Committee shall, at each regular meeting of the Council, make a detailed report of each case defended, including therein a statement of all expenses incurred in such defense; and, if approved by the Council, the Council shall order the treasurer to pay said expenses, and shall transmit the report to the Association in the regular way. No judgment against a member nor any settlement of a claim against a member shall be paid by the Association.

Section 9. The funds to be expended by the Medical Defense Committee shall be obtained as follows: In addition to the regular dues of this Association, each member, at his option, shall be assessed one dollar ($1.00) per year, to be paid with the Association dues. No member shall be entitled to the benefits of this fund and Medical Defense Committee unless he (or she) is a member in good standing of the West Virginia State Medical Association and has paid this assessment for the current calendar year prior to the date of the alleged malpractice and the institution of suit. All members who have failed to pay their Association dues and their assessment prior to April 1st of the current calendar year shall not participate in this defense fund; but they may be reinstated upon the payment of the same, but only for the remainder of the calendar year. No other funds of the Association shall be expended for this purpose. A balance from prior years may be expended with the approval of the Council; and if the expenses of the committee in any year in which no such balance is available shall exceed the amount received for that year, the amount available shall be distributed *pro rata* among those to whom the fund is indebted for attending trials as expert witnesses, unless the Council shall otherwise direct.

Section 10. Nothing in this chapter contained shall in any wise interfere with the defense of a member by an insurance company or like association.

Dana Medal Presented

The Leslie Dana Gold Medal, awarded annually in recognition of the "most outstanding work in behalf of prevention of blindness," was formally presented to Dr. George E. de Schweinitz, of Philadelphia, at St. Louis, Mo., on May 24, 1930. The presentation address was made for the St. Louis Society for the Blind, through which the medal was awarded, by Dr. B. Franklin Royer, of New York,

medical director of the National Society for the Prevention of Blindness.

Dr. de Schweinitz is a former president of the American Medical Association, the College of Physicians of Philadelphia, and the American Ophthalmological Society. He has devoted many years to active practice as an ophthalmologist and to teaching ophthalmology. In 1927 Dr. de Schweinitz received the Howe prize medal in ophthalmology. He is the author of one of the best-known standard textbooks on the eye.

McConnellsville Meeting

The annual meeting of the Eighth District Medical Society of Ohio will be held at the Rocky Glen Sanatorium at McConnellsville, fifty miles from Parkersburg, on June 19, 1930. The program will include Dr. André Crotti, chief of staff of the White Cross Hospital, Columbus, Ohio. A number of West Virginia doctors are expected to attend this meeting and final plans for the gathering have been completed. Dr. Louis Mark, medical director at the Rocky Glen Sanatorium, who is in charge of the Eighth District conference, has issued a personal invitation to all West Virginia doctors to attend the June 19 meeting.

Response of Dr. Welch

The JOURNAL is pleased to have the opportunity of publishing herewith a major portion of the response of Dr. William Henry Welch delivered in Memorial Continental Hall, Washington, D. C., on April 8, 1930, in honor of his eightieth birthday. Meetings were held in all parts of the world, commemorating the event. The Washington ceremonies were attended by President Herbert Hoover and many other notable personages in the field of medicine and of public life. After acknowledging the many kind words and tributes to his fifty years of research in the field of scientific medicine, Dr. Welch reviewed briefly the high points of his career and predicted the future of medicine. He said, in part:

"No one could have been more favored in his professional career by time and opportunity, and by the good work, achievements, and coöperation of pupils, assistants, and associates, than I have been.

"Born only three and a half years after the introduction of surgical anesthesia, I entered upon my professional career in the middle seventies of the last century, before Lister had really triumphed by the general adoption of the principles of antiseptic surgery and just before the demonstration by Pasteur and by Koch of the causation of infectious diseases by microscopic germs.. I returned from Germany, thrilled with enthusiasm, at the dawn of the new era, and with some training and capacity to use that master key forged by pathology and bacteriology, which was to unlock secrets of nature destined to transform the fact of modern medicine.

"Since that time the fundamental achievement which has made possible the remarkable development of scientific medicine in this country during the last four decades has been the great improvement in medical education, with the accompanying creation of laboratories for instruction and research. So brilliant have been the results in discoveries and their application to the treatment and prevention of disease that one is likely to lose sight of the foundation upon which the stately superstructure rests.

"Only those can realize the magnitude of this achievement who know something of the condition of medical education in this country fifty years ago, when no one dreamed of endowing medical education and research, in contrast with the condition today, when these subjects, together with utilization of opportunities to further and to apply the new knowledge, constitute the most favored and rewarding fields of private and public philanthropy.

"I like to think that the primitive little laboratory which I started in 1878 at the Bellevue Hospital Medical College, and that of Dr. Prudden, inaugurated almost simultaneously at the College of Physicians and Surgeons, and especially our effort to meet a much larger opportunity, at that time unique in this country, at the Johns Hopkins University and Hospital four decades ago, were not without influence in the improvement of medical education. But the accomplishment would not have acquired the national importance which it has assumed without the participation of other medical schools in the forward movement, the awakening of the medical profession through the American Medical Association and the state licensing boards, and the recognition of the great foundations, first and most important of all, the General Education Board, of the needs and opportunities of the situation.

"If I have handed on any intellectual heritage to pupils, assistants, and associates, whose work and achievements have been the greatest satisfaction and joy of my life, it is derived from that which I received from my own masters. America is now paying the debt which she has owed so long to the Old World by her own active and fruitful partic-

pation in scientific discovery and the advancement of the science and art of medicine and sanitation.

"The greatest triumphs of modern medicine have been in the prevention of disease, although the physician's power to alleviate and to heal has also been greatly enhanced. It is perhaps not too much to claim that America has taken a position of leadership in the application of the new knowledge to the prevention of disease and to personal and public hygiene.

"But it is my inclination, even at four-score years, to look forward rather than backward, and to avoid a feeling of self-complacency through the rehearsal of past triumphs. All along the line, in the fields of medical education and research, in the study and treatment of disease and injury, in the preservation and improvement of health and the prevention of disease, so much more remains to be done than has been accomplished, the problems awaiting solution are so numerous and pressing, above all, the better utilization of existing knowledge and the need of more knowledge are so obvious and so urgent that our mental attitude should be far removed from satisfaction with existing conditions.

"While public health is the foundation of the happiness and prosperity of the people and its promotion is recognized as an important function of government, how wide is the gap between what is achieved and what might be realized; how inadequate is the understanding of the public concerning the means adapted to secure the best results; how small the attractions offered to those entering or who might desire to enter careers in public health through lack of suitable financial recompense, of security of tenure of office, of opportunities for promotion, of standards for eligibility based upon special training and experience, and of funds made available for the public promotion of health. Something of the lack of adjustment of the average man to rapidly changing social, economic, and political conditions of our complicated modern civilization may be reflected in a certain temporary maladjustment between curative medicine and preventive medicine, which should stand in harmonious relations.

"As my immediate and, doubtless, final professorial interest is on the humanistic side of medicine, I may, in closing, be permitted to emphasize the attractions and importance of studies in the history of medicine and of science. We physicians apply the word "humanism" to a period and to a spirit which released the mind from thralldom to authority and contributed mightily not merely to the study of antiquity but to the study of nature and of man, leading logically and rapidly to the cultivation of experimental science, between which and humanism, as we understand and use the word, there is no incompatibility whatever.

"While nothing can be more hazardous than to attempt to predict the directions of future discovery and progress in the biological and medical sciences, it requires no prophetic gift to be confident that with the widening of the boundaries of knowledge will come increased power to relieve human suffering, to control disease, to improve health, and thereby add to the sum of human happiness and well-being. Your presence on this occasion, and the widespread recognition so conspicuously manifested of the value of services rendered in the field of medical education and medical science, are an encouragement to teachers and workers for which I am profoundly grateful and which accentuates the note of hopefulness which I have endeavored to sound."

The Psychology Craze

Ever so often human beings become faddists. They follow, without investigation, background, training or adaptation, the leadership of any given movement or fad. Today they follow the popular fad of the psychology craze—that craze in which almost any individual without qualification finds he possesses certain Freudian powers and is able to explain all phenomena, great and small, by the teaching of the intellectual psychology. As a result, psychoanalysis is being exploited by fools, half-baked so-called psychologists, the baker, the grocer, and the schoolgirl of sixteen. This, no doubt, came to pass when psychologists and neuropsychiatrists turned to the public press to exploit in detail psychology, its mechanisms, and its teachings, all of which has been disastrous to scientific thought and healthful progress.

When one sees everything explained, from Nero's personality to Hoover's election, on the basis of psychology, he begins to see the ridiculous side of the situation. It is most unfortunate that a scientific contribution should have taken such a turn. When one tries to ascertain the reason for such affairs, he must, in a way, deduce a certain evaluation of the new psychology. In doing so he is immediately struck with two things: first the good, and second the evil, which it possesses.

Freud's contribution to science must rank with those of the greatest, and while it has thrown much light on the subject of psychology and revealed

much in the field of psychopathology, the real true evaluation of psychoanalysis in the art and practice of neuropsychiatry still remains speculative.

The harmful effect of Freud's contribution was not due to Freud, but Freudian disciples. Here was something new. Here was something to be capitalized. The lure of the press and the platform was too great; human frailty yielded. Medical ethics, soothed by the present-day practice of medical enlightenment through the press, gave way to the urge of personal publicity. Magazine writers saw the cue and took it. Popular writers capitalized it—a capitalization made easy when men and women, young and old, preachers, spinsters, barristers, already made ready, found it a medium of expression of thoughts which for years had been taboo, such as the biological urge, sex expressions, repressions, sublimation, complex, inferiorities, conflicts, dreams and dreamy states—words and terms today used with little true Freudian significance and interpretation.

As a result of this and all these, every boy and girl of adolescent age, the rank and file of citizenry, and the clergy, the medical profession has precipitated unintentionally a conflict which psychoanalysis will have no difficulty in analyzing, but a conflict difficult to overcome, a conflict of idealism *versus* materialism, morality *versus* immorality; for, shall youth lend its listless ear to psychoanalytic whispers, "Do not repress," or to the voice of Moses through the ages, "Thou shalt not." Herein lies the conflict.

It was most unfortunate that Freud regarded the basic instincts of purposive activity to be wholly the sex urge; for the theory of purposive activity, censorship, conflicts, repressions, dreams, symbols, sublimation, projection, and rationalization is not half-bad phraseology in expressing conditions and phenomena which psychiatrists had long before recognized but had not clothed with such a delightful terminology. For example, it is much easier to ask, "What is your complex or conflict?" than to say "What are you worrying about?" It is much more polite to say "repress" or "sublimate" than the old alienist's way of saying "Forget it—concentrate on something else." And to say to the patient "You are ralionalizing" is better than to say "You are lying." All of which leads us to ask how much of the Freud idea is really new except the phraseology, the sex theory, and interpretation of dreams. However, the most unfortunate part of the entire situation is that Freud and his disciples did not foresee the harmful effects of such teachings. As a result of the bungling of Freud's disciples, the old Master himself must pass on not fully appreciated.

And so we must wait, but in vain; for another century must pass for a true evaluation of Freud's work. In the interim one prays for the advent of another fad, something less dangerous, less harmful, something more hopeful, something that will lure the masses to more sober thinking, something that will return to youth his former ideals of truth, virtue, and morality.—*Pennsylvania Medical Journal.*

The A. M. A. Meeting

The eighty-first annual meeting of the American Medical Association will be held at Detroit from Monday, June 23, to Friday, June 27, 1930. This announcement is of interest not only to those of our members who are Fellows of the American Medical Association but to all those who may desire fellowship and who desire to attend the Detroit meeting. All members of the West Virginia State Medical Association are, *per se*, members of the A. M. A., and are entitled to fellowship by paying the annual dues of $7.00. The dues for fellowship constitute the subscription price of the *Journal of the American Medical Association.* Only Fellows of the A. M. A. are entitled to register at the annual sessions.

Those who intend to make the trip to Detroit will do well to make arrangements somewhat in advance. The first consideration is, of course, the matter of hotel accommodations. The Statler will be headquarters hotel. Dr. William C. Lawrence is chairman of the subcommittee on hotels. His address is 1805 Stroh Building, Detroit. We are sure that a letter to Dr. Lawrence, explaining the sort of accommodations desired, will get results. According to the list published in the January 18 number of the *Journal of the A. M. A.*, the hotel rates for the Detroit session are on a par with those of other cities in its class. They certainly do not appear to be exorbitant.

The next matter of importance in connection with the trip is that of railroad rates. The regular reduced-fare tickets for the occasion will be on sale June 18 to 24, and will be good until July 1. The certificate plan will be used this year, as heretofore. That means that a full-fare ticket must be bought to Detroit, and a certificate of purchase secured—not merely a receipt. This certificate, countersigned by the secretary of the A. M. A. at Detroit, and presented to the proper ticket office in Detroit,

will enable the holder to purchase a return ticket, over the same roads used in making the going trip, at one-half fare. This is the only way these rates may be secured.

The house of delegates will meet in the ballroom of the Statler Hotel at ten o'clock on the morning of Monday, June 23. The program of clinical lectures will begin at two o'clock in the afternoon of Monday, June 23, and will run through Tuesday. A feature of particular interest in this connection is the moving-picture illustration of important obstetrical procedures, given by Dr. J. B. DeLee. It is understood that a most exhaustive series of section programs have also been provided. This program has not yet been published.

Of special interest this year will be the numerous scientific exhibits prepared by committees from the scientific sections and various organizations. The special exhibit on fractures heretofore provided by the coöperative committee on fractures will be repeated this year upon special request. This year these demonstrations will cover fractures of the hip, shoulder, scapula, and the lower extremity. The services of some seventy-five physicians have been secured in conducting these demonstrations, which will be continuous. The biochemical diagnostic methods exhibit, presented for the past three years, will also be repeated. These demonstrations are arranged under three heads: (1) Routine tests which every physician may undertake in his office; (2) the chemical blood determinations which may come into wide use; and (3) methods primarily of a research character. The section on obstetrics, gynecology, and abdominal surgery will assist in the preparation of an exhibit on (1) maternal mortality and morbidity, (2) intrauterine röntgen diagnosis of fœtal deformities, and (3) factors of sterility and their treatment. A committee has been appointed to prepare a special exhibit dealing with the treatment of varicose veins, including the injection method of treatment. Arrangements have been made for a fresh pathology exhibit. Both surgical and necropsy material will be secured from Detroit and Ann Arbor. Every variety of demonstration of interest to pathologists and those interested in pathology will be undertaken in a continuous performance. There will be on exhibit, under the auspices of the section on diseases of children, (*a*) material covering the relation between underweight and malnutrition; (*b*) diet in pediatric practice, and (*c*) selected exhibits of educational and research character. The section on neurology is promoting an exhibit dealing with the subject of cancer of the bladder. In this connection, the committee desires material suitable for the exhibit. Dr. Fletcher Colby of Boston, Massachusetts, is chairman of the committee. Those of our members who may have something to suggest in this connection should write to Dr. Colby. The section on radiology is arranging an exhibit of an educational nature, principally. This committee desires films, prints, and the like. Dr. T. M. Hickey, University Hospital, Ann Arbor, Michigan, is chairman of this committee.

Finally, the local committee on arrangements has assured us that the program of entertainment will be quite complete and entirely satisfactory. Among the items of interest in this particular will be visits to the Ford Historical Museum, about which we have read so much in the daily press. On Saturday, June 28, Fellows and their wives will be the guests of the Wayne County Medical Society on a boat ride on the Detroit River and Lake St. Clair.

The May 24 issue of the *Journal of the American Medical Association*, which is the convention number, carries the full and complete program of the Detroit meeting.

State Board Examinations

The next meeting of the public health council for licensure will be held at Martinsburg on July 8–10, 1930, it has just been announced by Dr. W. T. Henshaw, state health commissioner. Approximately twenty-five candidates for license will be examined at that time. A number of applications for reciprocity have also been received. Following the Martinsburg meeting, the next session of the public health council will probably be held at Morgantown next November.

Combating Superstition

Difficulties of providing medical care for mountaineers are not only those of isolation and transportation. Nurses and doctors find themselves against a hard wall of resistance to modern knowledge. Miss Pauline Myers, a public health nurse in the Kentucky mountains, says in the June *Hygeia* that this resistance is largely due to a stoical acceptance of things as they are.

Of the congenitally crippled child the mountaineer says, "He war borned like that; it's God's will." Of the child crippled through infantile paralysis or tuberculosis he says resignedly, "God made him like that. We can't fight the will of God."

Miss Myers tells of her efforts to help a girl with stiff elbow joints. The child herself was eager to try the plan proposed by the nurse, but convincing her ignorant, superstitious parents was another matter. After much persuasion they allowed her to be taken to a surgeon, but no sooner had she left than they sent word for her to come home. Her father had had a dream, and he knew that no good would come of trying to change God's will.

After a long session the nurse again pacified the parents. Two days passed and a frantic long-distance call implored the nurse to investigate the girl's father's health. He had written her that he was dying and that she should come home at once. Investigation quickly revealed that the dying gentleman himself had ridden five miles to post the letter. With that matter settled, the girl was operated on and successfully started on the road to recovery; but at any time Cash may hear more voices and see more visions and the whole thing may have to be done over again, Miss Myers declares.

Infant Nutrition

"Infant Nutrition," a textbook on infant feeding for students and practitioners of medicine, by W. McKim Marriott, B.S., M.D., professor of pediatrics at Washington University school of medicine and physician-in-chief at St. Louis Children's Hospital, has just been received for the library through the courtesy of the C. V. Mosby Publishing Company.

There is perhaps no field in medical practice in which more difference of opinion has existed than in that of infant feeding. So numerous have been the theories advanced, and so diverse the methods of feeding recommended, that the general practitioner is likely to become hopelessly bewildered. In his new book Dr. Marriott summarizes present-day knowledge concerning the nutritional requirements of infants under normal and pathological conditions, and indicates the effects of failure to meet any or all of these requirements. An effort has been made by Dr. Marriott to evaluate present-day knowledge of nutrition on the basis of actual clinical trial, and conclusions have been arrived at, not in the laboratory or easy chair, but in the clinic.

The volume is well printed in large type, and has 354 pages with more than fifty illustrations. It is an excellent reference work for the library of any doctor of medicine.

Aids to Adequate Infant Feeding

It is now well recognized by the best authorities that "a mother should nurse her offspring to the normal weaning time," whenever possible. In order to do this the mother should, herself, be put upon a proper, sufficient and adequate diet containing the necessary vitamins and other essential components of a well-balanced and generally nourishing diet.

Under "The Rational Diet," directions for a proper breakfast, luncheon and dinner are given, followed by some excellent remarks on the vitamins and minerals and their importance in the normal diet. It is important that the individual be studied for his "food tolerance," with attention to the factors pointed out, in order to prevent digestive disturbances. The doctor advocates periodical examinations every six months by experienced physicians and "not by specialists and life-extension institutes." This is an excellent suggestion.

Vitamin B Deficiency and Infant Mortality

Barnett Sure, Ph.D. (*American Medicine*, 1928) states as his belief, on the basis of his extensive experiments with rats and clinical observations by other authors, that every infant, breast or artificially fed, should receive some supplementary vitamin B product early in the nursing period. The article contains a brief review of the author's extensive work with vitamins.

MEDICO-LEGAL

"Administer" and "Dispense" Construed

State v. *Ball* (Wash.), 279 P. 735.—In the state of Washington it is unlawful for any person to sell, furnish or dispose of, or have in his possession with intent to sell, furnish or dispose of, any narcotic drug, except on the written prescription of a physician, and except that wholesale dealers in drugs may sell narcotic drugs to other wholesale dealers, retail dealers, physicians, dentists, and veterinarians. It is unlawful for any person to have in his possession any narcotic drug, except certain exempted preparations of such drugs, unless it has been obtained in compliance with the narcotic law of the state of Washington and with federal narcotic laws. Proof of the possession of any narcotic drug, except by a licensed physician, licensed manufacturer or licensed druggist, is *prima facie* evidence of an intent unlawfully to sell, furnish or dispose of it. (Remington's Compiled Statutes of Washington, 192[illegible] Supplement, Section 2509-3.)

The defendant was convicted of having unlawful possession of narcotic drugs and of the unlawful possession of such drugs with intent to sell them. She appealed to the supreme court of Washington. The published decision of the court does not show that the defendant affirmatively claimed that she had obtained from a physician the narcotic drugs found in her possession, although such a claim may be inferred from the language of the decision. The state law provides that any physician registered under federal narcotic laws may "administer" narcotic drugs for legitimate medical purposes, in the course of his professional practice, in quantities proportionate to the needs of his patient (*ibid.*). On behalf of the defendant it was contended that the provision allowing a physician to "administer" for legitimate medical purposes allows him, if acting in good faith, to deliver to his patient narcotic drugs to be taken away and used in the future. Under such a construction of the law, if the narcotic drugs in the possession of the defendant had been "administered" to her by a physician, her possession of them might have been lawful.

Under the Washington statute, said the court, there are only two ways by which a patient may lawfully get possession of a narcotic drug; namely, by having it "administered" by a physician or "dispensed" to the patient by a druggist on a physician's prescription. A physician can not lawfully "dispense"; a druggist can not lawfully "administer." The legislature seems to have used the word "administer" in the sense that the drug shall be taken by the patient at once, under the immediate direction and supervision of the physician. It seems to have used the word "dispense" to mean that the drug shall be delivered to the patient by the person filling the prescription, to be taken away for future use. This corresponds with the common understanding of the word "dispense." When the statute speaks of a physician using the drug for legitimate medical purposes in the course of his professional practice, it does not use the word "dispense"; the word "administer" is employed. The physician can give what is needed for present use, while such as may be needed in the future, if any, must be provided by means of a prescription, to be filled by one who dispenses the drug. This interpretation of the statute, said the supreme court, was adopted by the trial court and the instructions by that court in accordance with it were correct. The judgment of the trial court was therefore affirmed.

In a dissenting opinion, Tolman, J., said:

"We are now construing a statute which creates a crime, and should be careful not to make criminal anything not clearly embraced within the statutory prohibition. It seems to me not inconceivable that, under many circumstances not difficult to imagine as possible of occurrence, a physician might in good faith deem it necessary for the welfare of the patient to leave with the patient, with a nurse, or with some attendant, a dose or doses of some narcotic drug to be taken by the patient when the physician was necessarily absent, and, if so taken according to the physician's directions, the drug would be as truly administered by the physician as though given by his own hands. Because the instruction precludes the right to so administer, in my opinion it is erroneous."—*Journal A. M. A.*, May 24, 1930.

WOMAN'S AUXILIARY

The State Meeting

The complete report of the election and activities of the Woman's Auxiliary at the state meeting at White Sulphur Springs will be reported with the regular convention data in the July issue of the WEST VIRGINIA MEDICAL JOURNAL. At this time it is sufficient to report that the Auxiliary enjoyed a profitable meeting and a number of interesting social functions. A tea was given at Kate's Mountain Club on the afternoon on Tuesday, May 20, and a luncheon was given in the Tudor room of the Greenbrier Hotel at noon on Wednesday, May 21.

The White Sulphur meeting was presided over by Mrs. J. Preston Lilly, president, and saw the induction into office of the president-elect, Mrs. Walter C. Swann, of Huntington.

Kanawha County

The next meeting of the Woman's Auxiliary to the Kanawha Medical Society will be held at the home of Mrs. R. H. Paden, 1505 Virginia street, Charleston, on June 17. Dr. M. F. Petersen will address the Auxiliary at that time on some subject pertaining to pediatrics. Plans are also being made to show a moving picture at this meeting.

The last meeting of the society was held on April 17 at the home of Mrs. O. L. Aultz, 1305 Quarrier street, Charleston. An interesting program was presented at that time. An address was made by Dr. I. P. Champe, Jr., and a review of *Hygeia* was made by Mrs. W. S. Shepherd. In lieu of the May meeting, a tea was given at the home of Mrs. Champe, 1517 Virginia street, Charleston.

MONTHLY MORBIDITY REPORT

BY COUNTIES

APRIL, 1930	Chickenpox	Diphtheria	German Measles	Influenza	Measles	Meningitis, Cer. Spi.	Poliomyelitis	Scarlet Fever	Smallpox	Tuberculosis, All Forms	Typhoid Fever	Whooping Cough
Barbour					2							2
Berkeley		1						1				
Boone	3	1		6	11			2	1		1	4
Brooke	3	1			1	1		13	2			4
Cabell	3				27	3		5	11		2	8
Calhoun		1							8			
Clay	24			6								
Doddridge		1		28				2			1	
Fayette		1			14			2			1	5
Grant												3
Greenbrier									2		1	12
Hancock	1				1			19		2		1
Harrison	27	1	1		3			28				19
Jackson				5								
Kanawha	44	5		7	28	2		6		9	18	43
Lewis		2			2			10				
Lincoln	1	2	2		42				10			10
Logan	1	2			163	1		7	15		5	2
McDowell				1	6				7			5
Marion	6				4	1		18	34		1	4
Marshall	5	1			23			5		1		
Mason	1			2					2			2
Mercer	3	1			137			1	3			2
Mineral	15	10		48	8			3		9		23
Mingo					7				10			
Monongalia	8	2		2				1	1		7	5
Monroe												1
Nicholas		4						6	1			27
Ohio	48	1			19	1		10		5		7
Pocahontas				1								
Preston	2							4		2		
Raleigh	1	3			6		1			7	3	16
Ritchie	6							1		1		
Summers									1	2	1	12
Tucker											2	
Tyler										2	2	
Upshur								1		1		
Wayne									10			
Wetzel	1											1
Wirt	1			6		1		1				
Wood	5	2			2			12	24	1		1
TOTALS	209	42	3	112	506	10	1	158	142	42	45	233

The West Virginia Medical Journal

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JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - Huntington

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EPIDEMIC MENINGITIS *

By GEORGE M. LYON, B.S., M.D., F.A.C.P.
Huntington, W. Va.

I. *Introduction and Epidemiology.*—Our present conception of epidemic meningitis is that it is an infectious disease produced by the invasion of the human body by the meningococcus with subsequent localization of the organisms in the cerebrospinal fluid.

It occurs sporadically or in epidemics. Children and young adults are most frequently affected. Epidemics tend to occur approximately every ten years, usually in the winter or spring, and tend to remain localized rather than to become general. The only known pandemics have been limited to the tropics. Rural people are affected most severely and urban people less. Seaports, mining sections, and army stations have been the places of most extensive epidemics.

The disease is spread by direct contact with individuals suffering from the disease, or by contact with "convalescent carriers," or by contact with healthy individuals harboring the organism in the nasopharynx and known as "carriers." It is not known to be spread by contact with clothing, excreta, etc. Sporadic cases are generally due to contact with unknown carriers. The New York board of health found the meningococcus in the nasopharynx of fifty per cent of the patients suffering from meningitis, when examined during the first two weeks of the disease. It was found in the nasal secretions of ten per cent of the persons in close contact with the active cases. In a summer-school population of 500, A. W. Williams found eleven per cent of the individuals to harbor the meningococcus in the nasopharynx and none were known to have been in contact with active cases or carriers.

Flexner, in speaking of the mode of transmission, says: "A meningococcus carrier is introduced into a group of persons of the more susceptible ages. Of the latter, a certain number become contaminated through aspirating the rhinopharyngeal secretions which he ejects. Of those thus contaminated, a variable number actually become infected and develop meningitis, while a larger number are converted either into temporary (evanescent) or more enduring (chronic) carriers. The patient, during the acute illness and for an indefinite period while convalescent, is also a carrier. Hence the number of carriers produced exceeds the number of cases of infection, from which it may be concluded that the individual susceptibility to epidemic meningitis is low."

Mayer has shown that the carriers of the germ constitute about three per cent of our population. Sporadic cases are explained in this manner. Alterations in the type and virulence of the bacterium or an increased virulence from overcrowding and poor ventilation (tenements, barracks), and rapid trans-

* Read before the Cabell County Medical Society at Huntington West Virginia, on February 13, 1930.

mission from host to host probably explain the occurrence of epidemics.

Accepting the foregoing, one can not conscientiously approach these patients, in caring for them, without wearing a nose and mouth mask—not as a means of personal protection, but as a means of preventing the spread of the disease and as a method of reducing the number of carriers that might develop from a single case. This is a point which can not be overstressed. The fact that no cases of "hospital incurred" infection were observed on the wards of the large New York hospitals lent support to the early belief that the disease was not contagious. The work of recent years, however, has shown that it is contagious, and that, from lax methods of "patient isolation" there may come more carriers, and, from more carriers, more active cases of meningitis. Holt and Howland stated that they had not known a case of meningitis to originate in a hospital patient. Since 1918 I have personally known of two cases that originated in hospitals because of improper observation of isolation technique.

It is interesting to note here that Flexner injected meningococci into the cerebrospinal fluid of monkeys and the monkeys developed meningitis, and meningococci were recovered from their nasopharyngeal secretions. One must realize, then, that the nasal mucous membranes form a portal of egress from the cerebrospinal fluid spaces, and it is probably in this manner that convalescent carriers develop.

Epidemics have occurred in the United States with more or less frequency since 1808. The fact that each winter and spring brings its quota of cases justifies one in classifying the disease as endemic in the same manner that measles is endemic. Epidemics do not seem to advance by direct extension, but occur in widely separated regions at the same time. The epidemiological characteristics of acute poliomyelitis and epidemic meningitis are similar, and, together, differ somewhat in characteristics from the epidemics which advance mainly by direct extension and not by means of "carrier propagation." It is said that six to eight out of every ten thousand people contract the malady. Eighty-eight instances of more than one case in a home (double infection) occurred in fifteen hundred cases in 1904 and 1905, and thirteen out of five hundred cases in 1910. One may feel, therefore, because of the low morbidity rate and the low degree of contagion, that the mass immunity is high.

Carriers are classified as temporary (81.25%), persistent (12.5%), and periodic (6.25%). Flack found the average duration of a carrier to be four weeks, and about five per cent of these to persist for twelve weeks.

The meningococci disappeared from the nasopharyngeal secretions rapidly after the first week of the disease. Throat cultures from transient carriers usually became free from meningococci in seven to ten days, and were fewer in number per plate than the colonies in cultures from the throats of the chronic carriers. Infected ears, sinuses, tonsils, adenoids, etc., prolonged the carrier state in convalescent as well as in chronic carriers. It was shown by some workers that carriers are about twice as common among the poor as among the well-to-do. The World War saw the first extensive attempt to search for these meningococcus carriers and segregate them in isolation camps. As a matter of military hygiene it was a distinct success.

Sporadic cases, as a rule, tend to be less severe and to yield more readily to serum treatment than the epidemic cases. The character of the individual cases varies in various epidemics and in different stages of the same epidemic. At the beginning of an epidemic the cases seem to be more of a fulminating type, and as the epidemic wanes the severity of the individual cases decreases and the frequency of abortive cases increases.

Fifty per cent of the individuals affected were under five years of age, and twelve per cent were under one year of age. Cases of intrauterine meningitis have been reported. The aged do not escape entirely from its ravages.

As to mortality, Flexner compiled the statistics of eighteen epidemics occurring before the advent of anti-meningococcus serum therapy. The mortality varied from forty-two to ninety per cent. Blackfan gave the mortality rate since the advent of serum therapy as around twenty-five per cent. This latter figure would probably be high for the mortality rate in sporadic cases.

II. *Pathology.*—As a rule, the organisms gain access to the nasopharynx by droplet infection of this region. In most cases there is a transient meningococcemia with localization of the infection in the choroid plexuses and ventricles of the cerebrum. Then follows infection of the cerebrospinal fluid. At other times the cocci are said to go from the nasopharynx directly to the cranial subarachoid spaces through the perivascular lymph spaces of the cranial nerves. These spaces are said to communicate with the lymphatics, draining the nasopharyngeal passages on the one hand and the cranial sub-

arachnoid spaces on the other. The perineural sheath running from the cranial nerves (especially the olfactory nerves) is supposed to provide a means of egress or of absorption for the cerebrospinal fluid, and this is said to be also a portal of entry.

As the main pathological changes occur in the cerebrospinal fluid spaces, a review of the anatomy and physiology of the region involved is of value. I have prepared diagrams of views of an actual cast of the ventricles, and a rather schematic cast of my own, showing the ventricles and their communicating foramina and the communication with the subarachnoid spaces of the cranium and spinal canal. From these illustrations one can see readily how easy it is for obstructions to the flow of cerebrospinal fluid to occur.

The choroid plexus of the two lateral ventricles and of the fourth ventricle secrete the cerebrospinal fluid. From the lateral ventricles, via the foramina of Monro, the fluid enters the third ventricle, and via the aqueduct of Sylvius the fourth ventricle, and thence by the foramina of Luschka and the foramen of Magendie into the cranial and spinal subarachnoid spaces. As the subarachnoid space extends along the sheaths of the cranial nerves, some absorption undoubtedly occurs from this situation; but most of the fluid is absorbed through the arachnoid villa of the cranial venous sinuses. Normally, the cerebrospinal fluid circulation probably occurs in the manner traced above.

The meningococci have their early and main locus in the choroid plexuses of the lateral ventricles, and then, shortly, the -cocci and the purulent fluid are found in the entire cerebrospinal fluid chamber. In simple cases there is little more than this and a thickening of the lepto-meninges. The various foramina of exit—the aqueduct of Sylvius, the cisterna of various regions, and the spinal subarachnoid space (particularly in the thoracic region)—are frequently the sites of plastic adhesions or obstructions from a very thick, gelatinous fluid which may be very high in fibrinous content.

In proportion to the occurrence of these complicating factors, so do we have difficulty in effecting a complete cure, as they hinder the free flowing of the cerebrospinal fluid with its advantageous drainage and the further prevention of free access of the injected serum to the various chambers. Obstruction, with its pocketing off of purulent fluid, gives rise to the chronic and the intermittent forms of meningococcus meningitis. Obstruction of either foramen of Monro or of the aqueduct of Sylvius, with fluid free from organisms, gives rise to obstructive hydrocephalus. An understanding of the underlying anatomy, physiology and pathology of this special region is therefore essential to a rational view of the apparently bizarre complications and sequellæ that may occur. Particularly is it necessary when one desires to prevent these complications.

As there is a great tendency for basillar adhesions to occur in cases not treated with serum, not infrequently a chronic basillar meningitis develops. Thick exudate with later organization may involve the nutrition and function of cranial nerves, giving rise to most varied neurological complications. The cranial nerves most frequently involved are the optic and auditory, and the nerves controlling the extraocular muscles. Blindness occurs from various forms of extraocular and intraocular involvement, as well as from toxic and pressure neuritis of the optic nerve. Deafness is, in many cases, the result of a purulent otitis media (frequently not detected) as well as from auditory nerve involvement. Hemiplegia and monoplegia occur from other lesions and injuries occurring outside the cranial nerve group. Spinal nerves are involved from adhesions and constrictions of the perineural sheaths as well as from cord compression and conus medullaris involvement. Flexner says that before serum therapy twenty-five per cent of all cases had a more or less permanent sequella. Now, with serum therapy, there occurs a permanent sequella in about six per cent of all treated cases.

I shall not attempt to describe the minute changes in the meninges. The quantity of cerebrospinal fluid is generally increased in amount. It is usually cloudy although very early it may be clear. It is purulent or seropurulent—the latter only when very severe.

At autopsy, the exudate is usually heavy over the base of the brain, sometimes limited there. At times it is heavy over the convexity, but rarely limited there. In the cord the posterior surfaces present the greater part of the exudate of that region. At times it seems limited to the upper and lower portions of the cord. Even the central spinal canal has been found to harbor the organisms.

The skin frequently presents evidences of a meningococcemia in the form of petechiæ or purpuric spots. Herpes labialis is seen frequently in older children and adults. The meningococci have been shown in fluid from the purpuric blebs and from the herpetic vesicles.

The lungs are not infrequently the site of a meningococcus pneumonia, as has been shown by autopsy and lung puncture. Purulent otitis media,

frequently caused by the meningococcus, and sinusitis often occur. I have been especially impressed by the frequency of purulent otitis media (meningococcus) in this form of meningitis, and with the possible connection it may have with subsequent deafness, and as a possible factor in the spread of the organisms from the nasopharynx to the cerebrospinal fluid spaces.

Meningococcemia occurs, and while, as a rule, it is a transient affair occurring just prior to the localization in the meninges, yet at other times a persistent blood-stream infection occurs, and even an endocarditis.

The blood presents a leucocytosis of ten to fifty thousand cells. The increase is mainly in the polymorphonuclear cells (80–85%). Frequently, organisms can be cultured from blood during the onset of symptoms, before localization occurs.

Hydrocephalus, deafness, blindness, various nerve palsies and dystrophies, psychic alteration or epilepsy may occur as neurological complications. Pneumonia, conjunctivitis, otitis, sinusitis, and nephritis may occur. Lesions of the conus medullaris and unusual forms of iridochoriditis have been reported.

As the results of serum therapy, we often find the clinical changes resulting from serum sensitivity, among which are the following: early, anaphylactic shock, and, later, urticaria, angioneurotic edema, arthralgia, etc., and the lesions so caused are not to be confused with the lesions produced by the invading organisms.

III. *Bacteriology.* — The meningococcus is a gram-negative coccus which tends to appear in pairs and tetrads. It is rather difficult to cultivate, growing best under a reduced oxygen tension. It is especially sensitive to drying and chilling. Cultures seldom live over seven days. In taking spinal-fluid cultures and nasopharyngeal cultures, the suspected material should be kept at body temperature until transferred to culture media already warmed to 37.5° C. The meningococcus subcultures with progressively more difficulty after the incubating exceeds eighteen hours, and after twenty-four hours' incubation the staining characteristics are so altered by autolysis that the organism may not decolorize with gram stain. This gave rise to the earlier belief that the coccus was a gram-positive organism. Blood-agar and Loeffler's blood-serum media are suitable solid media. Optimal growth takes place at 37.5° C., and even small variations from this retard its growth.

While the spinal fluid is usually cloudy, it is not unusual, in the early stages of meningeal invasion and localization, to get a clear fluid which fails to show cocci on smear, but which gives cocci on culture. Conversely, many cloudy fluids, after intrathecal serum therapy, are sterile and yield no cocci on smear or culture. It also happens that, with the successful use of the serum, cocci can be demonstrated in smear; but they fail to grow on culture, due to their viability having been altered by the serum. As it is necessary to continue serum therapy as long as any organisms can be shown by either smear or culture, one should know the above facts to manage the treatment of such cases properly.

IV. *Antimeningitis Serum.*—The unusual incidence of meningococcus meningitis from 1904 to 1910, in this country as well as abroad, lent great impetus to the study of the disease, and, as early as 1905, cases were treated with an antiserum from immunized horses. The first injections were subcutaneous; but, during the winter of 1905–1906, Jochmann treated eleven cases of meningitis in human beings with intraspinal injections of the antiserum. In 1907 Kolle and Wassermann reported the results of fifty-seven cases treated in the same manner. In 1908 Flexner and Jobling published their report on the use of an antiserum, and their efforts established, beyond all doubt, the value of intraspinal serum therapy in meningococcus meningitis.

Subcutaneous injection of the serum is considered valueless. Intravenous administration is probably indicated in malignant forms and in meningococcemia. A specially refined serum should be used for intravenous administration. Intraspinal administration is the method of choice. Under certain conditions it is necessary to inject the antiserum into the lateral ventricles, the cisterna magna, or the cerebral arachnoid space, and when so done the administration has all the efficacy of the intraspinal treatment.

The antiserum is produced under license from the Hygienic Laboratory at Washington, D. C., and must be tested against a group of constantly renewed strains held there. These required tests include agglutination, complement fixation, and tropin tests. In the research laboratories of the Rockefeller Institute and of the New York Board of Health have probably been produced the sera of highest antibody titre. Both laboratories coöperate effectively with the Hygienic Laboratory in the maintenance of representative active strains in commercial sera and in the deletion of unnecessary strains and strains of

low antigen-producing power. In order to have the antiserum most effective, it is necessary to have incorporated into it the strain serologically specific with the one producing the infection.

There are about fifteen strains at present in the sera produced at the Rockefeller Institute, and probably about that many in the sera produced at the Hygienic Laboratory in Washington as a standard of comparison for commercially produced sera.

The serum is made by desensitizing a horse to the dead bodies of the meningococci, and then introducing, intravenously, live cultures of the virulent strains desired in the antiserum. The initial intravenous injection is usually about one-twentieth of a slant. Injections are repeated every third day, the dosage being increased as rapidly as possible until the horse is getting eight to twelve slants at a time, depending on the severity of the reaction of the horse. In about six weeks a suitable titre is reached. In four to eight weeks more a much higher titre is reached, at which level it can be maintained and the horse can be bled every two weeks in amounts of from six to ten litres. Refining the serum and salting-out certain protein factors renders the serum suitable for intraspinal use.

In order to get a maximum therapeutic effect, even from a highly specific serum, it should be of recent manufacture and it should have been kept at the proper degree of refrigeration since manufacture. The specific potency drops quickly if not kept properly refrigerated. I warn you, therefore, to be sure you are dealing with a supply house or pharmacist on whose integrity you can depend to have kept the product at the correct temperature. Well-regulated mechanical refrigeration is the ideal way to keep the serum.

My own experience has been limited to the serum produced by the Rockefeller Institute Research Laboratories, by the New York Board of Health, and by Parke, Davis, and Company. I have never yet encountered a strain that was not actively incorporated in the serum I was using at the time. In all cases in which I ran control agglutination of my particular organism, I obtained active agglutination in a dilution of at least 1:100 or 1:200. I feel that it is much more reliable to control all cases with the agglutination tests given below, rather than practice rotation of sera as is advocated by some. The refractory cases and intermittent cases are the ones in which particular benefit has apparently come from this practice. As I shall point out later, in most of these cases the difficulty is in localized areas of obstruction or empyema and not in the serum in use. It is known that the serum must come in direct contact with the infected fluid and with the organisms in it in order to sterilize it. Such is often accomplished with the greatest of difficulty in the cases of obstruction or localized meningitis without communication.

The procedure of specific agglutination testing follows: Add 3.0 c.c. of saline to an 18- to 24-hour-old Loeffler's slant culture and emulsify. Place 0.5 c.c. of the emulsion in each of six test tubes, and prepare serum dilutions as per protocol below:

Tube No. 1—0.5 c.c. emulsion; 0.5 c.c. of 1:10 normal horse serum; dil. 1:20.

Tube No. 2—0.5 c.c. emulsion; 0.5 c.c. of 1:25 normal horse serum; dil. 1:50.

Tube No. 3—0.5 c.c. emulsion; 0.5 c.c. of 1:10 meningococcic serum; dil. 1:20.

Tube No. 4—0.5 c.c. emulsion; 0.5 c.c. of 1:25 meningococcic serum; dil. 1:50.

Tube No. 5—0.5 c.c. emulsion; 0.5 c.c. of 1:50 meningococcic serum; dil. 1:100.

Tube No. 6—0.5 c.c. emulsion; 0.5 c.c. of 1:100 meningococcic serum; dil. 1:200.

These tubes are then put in a water bath at a temperature of 45° to 56° C. for three hours and read at the end of that time. The dilutions are given in the last figures in the protocol. If agglutination occurs in dilutions of 1:200 or 1:100, it is safe to rely upon the serum tested, and it is usually safe to rely upon it if agglutination occurs only in the 1:50 dilution, especially if the normal horse serum in this dilution shows no agglutination. Agglutination in dilutions of 1:20 shows a serum of low titre and one would do better by trying to get a serum which will agglutinate in higher dilutions. I have had specific agglutination occur in dilutions of 1:800 and 1:1,600.

While this may seem to some as a needless refinement, it can be readily carried out by any competent laboratory clinician. By this means one is assured of having an antiserum that will be effective as far as specificity is concerned. At present this is probably the best means we have of determining whether a given serum will be effective in a given case.

The chief action of the serum is due to the presence of bacteriolysins which destroy the organisms and which may in some degree parallel the specific agglutinins present. The action is in part due to another factor which promotes phagocytosis. There may be present a third factor—an anti-

endotoxin which neutralizes the toxic products liberated by the death of the cocci.

V. *Clinical Findings and Diagnosis.* — In the early stages of infection, before the cocci have localized in the meninges and have produced meningeal symptoms, one can rarely make an accurate diagnosis. Blood cultures may aid, but they often fail. At other times the cocci can be demonstrated in the fluid of a purpuric bleb or a herpetic vesicle, but this is rarely possible.

The onset may be so mild and insidious that several days pass before the true nature of the malady is known. Other cases may be so fulminating that the patient dies in the first twenty-four hours without signs of meningeal involvement. As a rule, however, in most cases the onset is quite suggestive, and the early advent of definite meningeal signs renders the diagnosis of a meningitis quite easy. In a patient with a purpuric rash or petechiæ, marked prostration, together with vomiting, chills, and headache, one should suspect meningitis, and a lumbar puncture is indicated. Hyperesthesia, cervical rigidity, and the presence of a positive Kernig's sign by themselves suggest a meningeal involvement and demand a lumbar puncture. A tense or bulging fontanelle is an absolute indication for a lumbar puncture. Howland taught that all children with convulsions should have a lumbar puncture done for diagnostic purposes, particularly when accompanied by persistent fever.

An absolute diagnosis rests upon the actual demonstration of cocci in the cerebrospinal fluid, either in smear or in culture.

On tapping the subarachnoid space, the fluid is usually under increased pressure, the globulin content increased, the cellular count is greatly increased (mainly bilobate cells), and gram-negative cocci can usually be demonstrated in smear (extra- or intracellular) or in culture. In the early stages the fluid may be clear, show no cocci on smear, have a normal globulin content and a normal cell count, and yet show cocci on culture. After serum therapy, one often finds a cloudy fluid with increased globulin and cell count, but no cocci on smear or culture. Toward the end of the case, as the cocci decrease in number and their vitality has been destroyed, one may demonstrate the dead cocci in smear, but they fail to grow on culture.

As explained otherwise in this paper, where the ventricles alone harbor the cocci, because of obstruction to the foramina or aqueduct of Sylvius one may get a normal fluid from a spinal subarachnoid tap and an infected fluid from a ventricular tap. Therefore, if in an infant there are signs or symptoms suggestive of a meningococcic meningitis and a spinal tap yields a normal fluid, a ventricular tap should be seriously considered. If the first tap yields ten to twenty cubic centimeters of purulent fluid and subsequent taps enter the subarachnoid space and yield only a few cubic centimeters of purulent fluid, in nearly every case an obstruction has occurred. Most often this is located in the foramen of Monro, the aqueduct of Sylvius, or the spinal subarachnoid space, by means of dye studies. One can readily visualize the diagnostic possibilities (and difficulties) from considering the anatomy, physiology and pathology of the cerebrospinal fluid tract. One must remember, also, that there is a marked tendency for the exudate to be thick and for obstruction and adhesions to occur. At times no fluid is obtained from a spinal tap. This is usually because the subarachnoid space is not entered, or because the pus is so thick that it will not run through the needle, or because an obstruction has occurred, preventing free circulation from the ventricles into the spinal subarachnoid spaces. Blackfan reported a case in which, under little pressure, the spinal fluid was slightly cloudy, had 2,800 cells per cubic millimeter, and a two-plus globulin test, with a negative Wassermann, and in which there were no cocci on smear or culture. This puncture was done on the 114th day of the patient's illness and meningococci were recovered from his throat and nasopharyngeal cultures. His temperature at that time was 99.6° F. and his leucocyte count 16,700. The condition cleared up promptly on serum treatment and the patient was well 122 days after the onset of his illness.

Children under two years of age present a vastly different picture from that of older children and adults. It is a fact, also, that they have a tendency to develop posterior basillar meningitis more frequently and therefore are most likely to develop it. The ease with which the ventricles and the subarachnoid spaces can be punctured is an aid in detecting obstruction and giving suitable treatment early.

The character of different cases varies so much from case to case and from epidemic to epidemic that no classification of symptomatology or clinical course is satisfactory in its entirety. I repeat the one given by Neal as representative of the attempts at classification:

I. ACUTE FORMS

1. Ordinary acute, usually well on the road to recovery in ten days:
   (*a*) Mild—usual mild form.
   (*b*) Severe—usual severe form, not always fatal.
2. Fulminating—usually dead in 72 hours, and may not show a cellular reaction in the cerebrospinal fluid.
3. Septicemic—septicemia more striking feature than the meningitis.

II. CHRONIC FORMS

1. Ordinary—usually lasts three weeks or more without clinical change, and resembles typhoid fever.
2. Relapsing.
3. Localized empyema, including basillar meningitis and encysted or loculated meningitis.

For more detailed descriptions of clinical types and symptomatology, any standard reference work may be consulted. The manifestations of the disease are so protean that one must rely mainly on detecting early any signs of meningeal irritation and do lumbar punctures for diagnosis when indicated. In the absence of a bulging anterior fontanelle, and in the absence of meningeal signs and with marked prostration, vomiting, fever, and especially if accompanied by a petechial or purpuric rash or by a history of exposure to meningococcus infection, a lumbar puncture should be done to rule out meningitis. This is a summary of the safest procedure to follow in the diagnosis of meningococcus meningitis.

VI. *Treatment.*—The *prophylactic treatment* consists mainly in complete isolation of the patient and of known carriers, so that new cases and new carriers are not produced by coming in contact with these organism-bearing individuals. This is best done by permitting no one to approach the patient or his room without a nose-and-mouth mask. All contacts with the case should be carefully watched as to nasopharyngeal cultures and positive carriers isolated. All evidence available at the present time indicates that infection comes only from the aspiration of infected droplets from the nasopharyngeal secretions of individuals harboring the organisms either as active cases or as carriers.

The *general treatment* is important, in that a good bed and good ventilation are essential. The temperature of the room should be kept around 68 to 72 degrees Fahrenheit. Drug therapy has no specific value. Symptomatic treatment is resorted to as seems indicated. Luminal, codein, pyramidon, and morphine are valuable in the alleviation of the distressing symptoms that come to the older children and adults. It is of the utmost importance to keep up the food and fluid intake, early resorting, if necessary, to the introduction of foods and fluids into the stomach by means of a lavage tube. Particularly important is this in small infants, where the malady has a tendency to linger for a long time and where vomiting tends to persist. Skin hygiene, particularly as it concerns the back, is of the utmost importance. Bed sores develop readily in older children and adults.

Special *local treatment* is required when an ophthalmitis, irridochoroiditis, otitis media purulent, sinusitis, arthritis, etc., develops. Injection of serum into the vitreous in irridochoroiditis and into the middle ear in otitis media and into the infected sinus in sinusitis has been reported by various clinicians as being beneficial.

Intravenous serum therapy should be resorted to when a meningococcemia occurs, whether accompanied by a meningitis or not. It probably has a beneficial effect in the severe, fulminating, septicemic type of case, even if cocci have not been demonstrated in the blood stream. It is doubtful if it should be used in other cases. The serum should be a fresh and highly refined serological product, especially prepared for intravenous use, and not the ordinary serum prepared for intraspinal use.

Intrathecal serum therapy has given most gratifying results, not only in markedly reducing the mortality but in reducing sequellæ as well. Serum may be injected into the spinal subarachnoid space, into the cisterna magna, and into the lateral ventricles; and at times it is necessary to resort to all these channels of approach. As a rule, injection into the spinal subarachnoid space is sufficient. The procedure and indications for these special treatments are given below.

Spinal subarachnoid administration of serum is best done when one has the proper equipment and experienced assistants who can hold the patient in the proper position (a most important factor). I suggest the following instruments and materials be at hand, and those necessitating sterilization properly prepared:

Four BD lumbar puncture needles (162LN—3 in.), sharp, new, 16, 17, 18, 19 gauge.
One 20- to 30-c.c. Luer syringe with plunger and five inches of rubber tubing, to which is attached

a metal tip for making the Luer connection into the puncture needle.
One package antimeningococcus serum (15 to 30 c.c.), warmed to body temperature and poured into the barrel of the Luer syringe above, which is used as a graduated funnel in gravity administration.
Four sterile test tubes with plugs, preferably sterile corks.
One hypodermic syringe with needle containing morphine, gr. 1/60 to 1/4.
One hypodermic syringe with needle containing epinephrin, 1: 1,000 (ℳXV).
Clean-up tray with sterile sponges, adhesive, 2% mercurochrome, alcohol.
One 2-c.c. Luer syringe with needle.
Three ampoules Dandy's neutral phthalein for intrathecal injection.
Gloves, prepared and sterilized, may or may not be included.

With the above equipment one is prepared to proceed with the utmost efficiency. In children I do not favor the use of a general anesthetic, as it has a certain risk on its own part and it predisposes to pulmonary complications. The patient's subjective symptoms, pulse and respiration unmixed with alterations produced by even a slight anesthesia, are most valuable guides in the withdrawal of fluid and the injection of serum. Local anesthetics are just as painful as a carefully done skin puncture with a good, short-beveled but sharp needle, and, fortunately, this region is poorly supplied with pain fibers. Where repeated lumbar punctures are to be done, the use of local anesthetics obliterates the landmarks and predisposes to local infection and irritation. In older children rectal anesthesia is being used with good results at the Harriet Lane Home for Invalid Children in Baltimore.

While there are many procedures that differ from the one I am about to describe, I present the one I employ, which has been most satisfactory over a period of twelve years.

The procedure should be done with the strictest asepsis. I prefer the feel of the needle unaltered by rubber gloves, as a delicacy of sensation is had by this method which can be had in no other manner. I believe that the advantage obtained in this manner justifies the omission of sterilized gloves in the procedure. The hands are carefully scrubbed, as for a surgical operation, finally going through a thorough soaking in bichloride-of-mercury solution, and this followed by alcohol. If one does this and does not touch the point or shaft of the needle or the immediate site of puncture, the operation can be carried out with strict asepsis. I have not had a single skin infection with this method in twelve years, and no fluid infections. I prefer mercurochrome and alcohol to iodine as a clean-up procedure, because the skin is kept in excellent shape even when as many as seventy-five lumbar punctures have had to be done in a period of six weeks. One could not possibly do this with an iodine technique.

I have the patient lying on the left side, with the neck and back flexed as much as possible, so as to separate the posterior spinous processes. Grasping the butt of the needle between the thumb and the fully flexed finger (in order not to touch the tip or shaft of the needle), and with the heel of the right hand resting on the back of the patient in the proper position, a quick, inward thrust of the needle pierces the skin and then the needle is directed in the midline and upward, the spinous process being indicated by placing the forefinger and the middle finger of the left hand on its lateral posterior aspects. The site over the puncture is not touched. Then, just as one delicately passes a probe, the needle can be passed through the cartilaginous plates, then finally through the dura with its gristlelike sensation, followed immediately by a sensation of greatly reduced resistance. The needle should be stopped immediately after receiving this sensation of "give," as usually at that time it is just barely in the subarachnoid space. This "feel" comes with experience and is a very delicate but definite sensation. After this is done, slowly withdraw the stylet. Usually, fluid appears after the stylet is withdrawn. If the point of the needle is not in the subarachnoid space, or if it is occluded by a nerve, a vessel, a clot of fibrin, thick fluid or pus, etc., one may have difficulty in getting fluid. Gently turning the needle with possibly withdrawing it a small distance will often disengage the obstructing factor, or it may be necessary to reinsert the stylet.

The fluid is then allowed to flow, slowly at first, until only fifteen to twenty drops fall per minute. The fluid caught in the test tube is saved for bacteriological and cytological studies. Cultures should be taken directly into warmed media, or, if not, the tubes into which it is received and preserved should be kept at a constant temperature of 37.5° C. until transferred to warmed media. This is important because of the difficulty in cultivating the organisms. After their viability has been further reduced by the administration of serum, it is even more important. As the continuation of serum therapy depends to a great extent on the absence or presence of viable organisms, one readily appreciates the need of observing these refinements of technique.

Carelessly pushing the needle in too fast, or forcefully, is likely to force the needle into the anterior

wall of the spinal canal and produce bleeding. The site usually chosen for puncture is the intervertebral space on a line with the two iliac crests (usually third or fourth lumbar), and this site can be located and marked out before the "cleaning up" is commenced. As a rule, in infants a sharp, short-beveled tip to the needle gives the best results, and after the fluid is thin and runs readily a needle of the smallest bore practicable should be used (19- or 20-gauge).

The serum, warmed to body temperature, is placed under aseptic conditions into the syringe-funnel and the Luer tip adapter on the end of a five-inch tubing is placed in the needle opening. The serum is then introduced by gravity. Raising or lowering the column of serum increases or decreases the pressure. If difficulty is met with in getting the serum to flow in, a gentle milking of the tube may be employed by grasping the tube between the first finger placed against the palm and successively applying the middle, ring, and little finger, the meanwhile maintaining pressure on all fingers applied. This is a safe procedure and is usually quite effective. Should signs of too much pressure appear, the syringe may be quickly lowered and inverted, thus acting as a syphon to facilitate the egress of serum and fluid and thereby reducing the intraspinal pressure. Extending the neck and back to normal position facilitates the inflow of serum. The ease and rapidity with which the fluid runs in by the gravity method is a valauble guide to dosage.

The amount of serum injected with safety is usually from 5 to 10 c.c. less than the quantity of fluid removed. This and the ease with which the serum enters are considered the criteria regulating the size of the injection at any given treatment. At times, as much serum or more may be given as fluid has been removed, but this is only under exceptional circumstances and need not be more than mentioned here.

After discontinuing the injection of serum, it is usually wise to replace the stylet and allow it to remain in place in anticipation of any bad reaction from increased intracranial pressure. If this occurs the stylet can be promptly withdrawn, the fluid allowed to escape and the pressure reduced. This often obviates a hurried puncture for relief of symptoms. Should symptoms of collapse occur (slow, shallow respiration, dilatation of pupils, prostration, or cessation of respiration), reduce the pressure at once, administer artificial respiration, and give epinephrin and atropin in full doses. One should always be prepared to meet this emergency when giving such treatment.

When a thick, plastic exudate appears, especially if only a few drops of spinal fluid can be obtained, it is advisable to inject small amounts of serum under moderate pressure. The danger of damage done in this manner is not as great as the danger of letting the patient go insufficiently treated. Thick exudate usually means a severe infection. Obstructions occur most frequently when thick exudates occur. Intraventricular and cisterna magna injections are indicated in thick exudates or when evidences of obstruction occur.

As to the frequency of serum injection, in the average case which is seen early three injections at 24-hour intervals, and a fourth 48 hours after the third treatment, will usually suffice. In severe cases and in cases seen late, injections may need to be given every eight to twelve hours the first few days, the frequency thereafter being regulated by the decreased bacterial findings, subsidence of symptoms, etc. The persistence of viable organisms necessitates frequent treatments, and, in addition to this, a study of the cerebrospinal fluid circulation with dye injections, in order to be certain that the ventricles and the subarachnoid spaces are communicating freely.

The serum can usually be discontinued when the fluid becomes clear and no organisms can be shown on culture or smear, and the ventricles and subarachnoid spaces are known to communicate. One's experience necessarily tempers one's judgment, as in other therapeutic procedures. Much suffering has been wrought by the overly optimistic attitude that permits of insufficient treatment. If intraspinal therapy alone is used, no case should have less than four treatments, and cases of average severity should require six to eight treatments as a minimum. One should be guided by careful laboratory work and not be entirely carried away by the apparently brilliant results often accomplished by the first or second injection.

As a possible improvement on this orthodox method of treating meningococcus meningitis, in infants I have employed a procedure that may be considered radical but which has much to commend it from the theoretical side, and, as has happened in my small series, much from the practical side.

As the efficacy of the serum depends upon its intimate contact with the organisms in the infected fluid, and realizing that serum distribution does not take place with anything like the rapidity of phenolphthalein diffusion, in 1926 I attempted to bring

about a larger and more direct serum administration as follows: With an infant of ten months on its left side, and with the back flexed as is usual in doing a lumbar puncture, I withdrew at the first puncture 20 c.c. of cloudy fluid, and after extending the back I was able to inject 25 c.c. of serum by gravity method. Then the needle was withdrawn, the patient placed face-up on the table, a right ventricular puncture done, 30 c.c. of cloudy fluid removed and 30 c.c. of serum injected by gravity. Then the needle was withdrawn, the patient placed on the left side, the neck flexed, the back flexed, and a cisterna magna puncture was done. In this position there was a great increase in fluid pressure and it was very easy to withdraw 30 c.c. of fluid. It was my belief at the time that, of the 55 c.c. of serum injected, I obtained a much more direct application of the serum to the invading organisms, and that by subsequently draining from the cisterna I was drawing serum from the spinal subarachnoid space upwards, and from the ventricular space above downward, through the third and fourth ventricles. This procedure was repeated once thirty-six hours later, and no further treatment of serum was given. The result was excellent. Twice since that time I have treated patients in this manner, each time with gratifying results. In no case, however, have I been willing to give less than two serum treatments, and I do not recommend generally, as yet, the above recited attempt at greater initial dosage and greater distribution of injected serum. It has much to recommend it from the theoretical side, and I can say that in three cases I have obtained perfect results.

This is too small a series of cases from which to draw any definite conclusion. However, it is suggestive of a procedure that may yield a quicker and better result than simple intraspinal administration of serum at more frequent intervals and in necessarily smaller doses. In the average case, in an infant of ten months, we feel we are doing well if we can withdraw 15 to 20 c.c. of fluid by spinal puncture and inject 10 to 15 c.c. of serum at the first treatment. Subsequent treatments can often be larger. In the case cited above, 80 c.c. of fluid was removed (probably part of this serum) and 55 c.c. of serum injected, giving a much larger initial dosage and a wider immediate distribution of serum.

Repeated lumbar puncture after the fluid is clear and sterile is indicated in order to reëstablish a normal cerebrospinal fluid "production-absorption" balance, the production of fluid in the choroid plexus of the ventricles having been accelerated by the infection and by the serum, and the absorption having been delayed by the exudate and thickening over the absorbing areas of the arachnoid and arachnoid villa. Until this balance is reëstablished there is an increased cerebrospinal fluid pressure and, in a measure, a state of potential hydrocephalus. It is my belief that many of the post-meningitic sequellæ occur as a result of a failure to drain the spinal fluid chambers a sufficiently long time after serum therapy is discontinued. Particularly is this true in children over two years of age with a rigid calvarium, and in adults. I furthermore feel that Dandy's neutral phenolsulphonephthalein should be injected into the spinal subarachnoid space in all cases with thick exudate or pus, and a ventricular puncture (right and left) done about one-half to one hour later, in order to detect the occurrence of obstructions. The frequency with which these obstructions occur is not properly appreciated, even by those who have done a great deal of work in meningitis. There is a great tendency to accept the cases of hydrocephalus that develop as inevitable sequellæ. This should not be. It is the early detection of these obstructions, before irreparable damage has been done, that permits their early medical or surgical treatment. From such cases arise most of our cases of obstructive hydrocephalus. In cases of post-meningitis hydrocephalus of the communicating type, repeated lumbar punctures over a long period of time, with a faithful attempt to permit nature to slowly resore the normal "production-absorption" balance, frequently yields brilliant results. Dr. Robert Hood has had similar good results with this method.

If anaphylactic reactions occur, as may occur with the injection of any foreign sera, at once give epinephrin and morphine hypodermatically and provide artificial heat. This usually controls the situation.

Intraventricular treatment is necessary in very severe cases and in cases developing obstructions above the cisterna. This procedure in an infant with a patent anterior fontanelle follows. The patient is placed face-up on a pillow on a table of suitable height, and the body is held firmly between the forearms of an assistant, while the head is securely held between the palms of the assistant's hands with the fingers well fanned out so as to give a maximum of control. This holding is a most important part of the procedure, not even secondary to the actual making of the puncture itself. Under aseptic conditions the skin is pierced in the most lateral

region (not over 5 cm. from midline) of the anterior fontanelle. Then the needle is pointed along a plane traversing the inner canthus of the eye of the corresponding side of the head, and somewhat backward. After piercing the dura, the soft tissue of the brain is felt and at a variable depth, a sense of reduced resistance gives one a feeling of having pushed the tip of the needle into a cavity. The stylet is removed, and if no fluid appears the needle is slowly and carefully withdrawn until fluid flows or the needle is entirely withdrawn. When fluid appears (unless the tip of the needle is just in the subdural or subarachnoid space) one is in the ventricle and drainage and injection of serum may be carried out as in intraspinal treatment.

Puncture of the cisterna magna is especially valuable in treating basillar meningitis, and also when there are adhesions in the spinal subarachnoid space which prevent the free circulation of the fluid and serum upward. It is a procedure not entirely free from danger, but one which, when properly done, entails a very slight risk. At times it is absolutely necessary in the management of a difficult case. The patient is placed on his left side, as for a lumbar puncture. One assistant holds the body and a second assistant holds the head with the neck flexed to the maximum. The operator feels the lower margin of the occiput and this is marked with a pen as a landmark, and a second pen mark is made by extending a line upwards from the posterior spinous processes of the cervical vertebræ. A line penetrating both external auditory canals should be perpendicular to a saggital plane passing through the posterior spinous processes in order to assure the child being held in the proper position, thus facilitating ease of operation. Then, after cleaning up, and under aseptic conditions, the needle is grasped as in doing a lumbar puncture and inserted in the midline just below the margin of the occiput, forced through the occipito-atlantoid ligament, and then the same sensation occurs as when the dura is pierced and the canal entered in doing a lumbar puncture. Once the dura is pierced inward pressure must stop immediately, as the danger of this procedure lies in going in too far. The stylet is removed and the fluid obtained. When serum is injected one proceeds as in other regions.

To ascertain the existence of free communication of the cerebrospinal fluid in its various chambers, neutral phenolsulphonephthalein can be injected into a selected space. Its appearance at one or all the other sites establishes the degree of free communication existing. As a rule it is injected into the spinal subarachnoid space and recovered from the ventricles or cerebral subdural spaces in from ten to twenty minutes. Its failure to appear at one or all sites indicates obstruction, the location of which can usually be determined by a properly analyzed study of the dye appearances. By this means obstructions can be demonstrated at times in the right or left foramina of Monro, the aqueduct of Sylvius, the foramina of Luschka, and the foramen of Magendie, or local subarachnoid obstructions. It is the most important procedure in the early detection of acute obstructive hydrocephalus, and this at a time when the obstructing mass or adhesions may be friable and easily broken down, and before much damage has been done. At this time operative interference gives its best results.

Cranial subarachnoid puncture and *cranial subdural puncture* are done by barely piercing through the scalp in the region of the anterior fontanelle about two to four centimeters from the midline. One may not be certain whether the needle is in the subarachnoid space (hydrocephalus, empyema, or normal) or subdural space (pachymeningitis hemorrhagica interna). When fluid is obtained from a cranial subarachnoid puncture in a normal individual or in communicating hydrocephalus, the fluid obtained is similar in character to that from the ventricles and from the cisterna magna. In obstructive hydrocephalus, it may differ from the fluid from the ventricles, but will probably be similar to that from the cisterna magna. Even in this condition, fluid from the ventricles and from the cisterna magna may be similar. In empyema of the cranial subarachnoid space in meningitis, a purulent fluid may be obtained and the fluid from the other spaces may be clear or otherwise essentially different. Dry taps occur frequently in this region.

When fluid is obtained from a subdural puncture a pachymeningitis hemorrhagica interna is said to exist. This diagnosis is made by obtaining a bloody fluid with a yellowish cast as the red cells settle out. There is no tendency to clot or form a fibrin film. In subarachnoid spaces dye may be recovered when introduced into the cerebrospinal fluid system, but it is never obtained from a subdural puncture, nor does one get the dye in the fluid from a pachymeningitic sac. I have recently seen pachymeningitis hemorrhagica interna develop as a complication of meningococcus meningitis. This is of interest mainly because at present the factors leading up to the development of the unusual condition are not known.

VII. *Complications.*—Early serum treatment, potent and specific serum, sufficiently prolonged serum therapy, sufficiently prolonged spinal drainage following cessation of serum therapy, an ever-watchful eye to the slightest signs of obstruction, and the use of dye studies to determine the existence of free communication or obstruction, are factors that tend to prevent complications.

Hydrocephalus is the most serious and most frequent complication occurring in infants or young children. As pointed out by Blackfan and Dandy, it is either *obstructive* or *communicating* in type.

Obstructive hydrocephalus occurs as a result of pocketing off of the fluid, due to an obstruction of some of the foramina of exit of the ventricles or obliteration of the cisterna at the base of the skull. Early detection of the obstruction by means of dye studies, with appropriate serum therapy (intraventricular, cisterna puncture, or serum irrigation of the type described) offers much the best opportunity for a favorable outcome. Surgical interference is at times necessary to remove aqueduct or fourth-ventricle obstruction, but has in itself a great operative risk.

Workers in this field have not frequently enough resorted to a rational and safe procedure presented by Blackfan and Dandy—namely, the injection of dye to determine the state of communicability of the various spaces. It is my feeling that no infant with a patent anterior fontanelle and suffering from a meningococcus meningitis should be discharged until a communication can be demonstrated between both ventricles and the spinal subarachnoid spaces. If this can be shown, and the spinal fluid is clear, no obstructive hydrocephalus can result. I consider this procedure in the management of complications just as important as the use of specific serum in the specific treatment of the disease. Contrary to popular belief, dye studies so made and intraventricular punctures, if properly done, are little if any more dangerous than simple spinal subarachnoid punctures. I say this from an experience with dye studies and with intraventricular punctures extending over a period of twelve years.

Communicating hydrocephalus occurs as a result of a too-free production of fluid by the choroid plexus occasioned by the infection or because of impaired absorption powers as a result of thick exudate, inflammatory processes, etc. Symptoms of increased intracranial pressure, a characteristic restlessness, a bulging fontanelle, a tendency for the head to increase in circumference (measured daily with a steel tape), recurring increased pressure of spinal fluid, and a greatly reduced phenolsulphonephthalein output in the urine during the two hour following the injection of 1 c.c. into the subarachnoid space, warrants a diagnosis of communicating hydrocephalus. Prolonged spinal drainage frequently yields a brilliant result in this condition.

Already many complications have been mentioned. These are best prevented by the intensive and careful treatment listed below. Sequellæ are less common with serum therapy, and include various kinds of paralysis, deafness, blindness, epilepsy, neurotrophic disturbances of the lower spinal nerves, neurasthenia, etc.

In closing, let me emphasize the value of the following in the treatment of meningococcus meningitis:

1. Early serum treatment.
2. Potent and specific serum in adequate dosage.
3. Sufficiently prolonged serum therapy.
4. Sufficiently prolonged spinal drainage after cessation of serum treatment.
5. Early detection of the first evidences of obstruction.
6. Use of dye studies to determine the existence of communication or obstruction, where possible.

THE CLINICAL INTERPRETATION OF BASAL METABOLISM STUDIES*

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The earlier physiological studies of metabolism were not applicable to the individual patient in the clinic. Not until the method of indirect calorimetry was devised, by which the oxygen intake or carbon dioxide output could be readily determined, did this subject take on routine clinical importance, and this has all come about, we may say, since the close of the world war.

Total extirpation of the thyroid gland reduces the metabolism to about sixty per cent of normal—that is, to a rate of about minus-forty. This implies that, normally, about forty per cent of the heat developed by the body is dependent upon the function of the thyroid gland. While there are other factors, such as inanition, which reduce the rate below normal, yet the subject of subnormal metabolism revolves in very considerable measure about the thyroid and its function.

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* Read before the Cabell County Medical Society at Huntington, West Virginia, on February 27, 1930. From the Medical Department McGuire Clinic, St. Luke's Hospital.

Likewise, in the matter of increased rates, the thyroid is again the conspicuous organ and function with which we are concerned. Abnormalities of other endocrine glands are known to alter in moderate degree the rate of oxidation of tissues. There is, however, only one condition other than hyperthyroidism at present known to be characterized by elevation of the metabolic rate in any degree comparable with the effect of the overactive thyroid, and that is the leukemias. As a rule this condition gives rise to no diagnostic confusion if the blood is subjected to the usual routine examination.

There is increasing evidence to show that the average metabolic rate of any given area of population may have an important bearing on endemic disease in that territory, and that the seasonal variation in the average rate must be taken into consideration with the endemicity of certain diseases. In contrast with metabolic studies in individuals, such variations as applied to whole races or section of people need not be of the same order or degree in their deviation from the average in other areas, in order to take on significance. Thus it is recognized that in the southern United States the average rate is somewhat lower than the standards worked out in latitudes farther north; and in the south, at least, the average rate seems to fall during the spring and early summer months (Chart I). These two

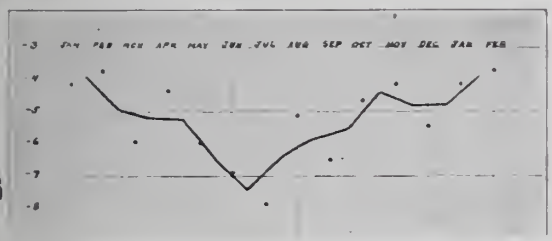

CHART I.—Curve shows the mean of average for the calendar months over a period of three years of the basal metabolic rates below 20. Total rate determinations 1,976. Average number for each calendar month, 165.

factors (latitudinal differences and seasonal variations) may, of course, be secondary to some factor such as protein intake, but, regardless of their explanation, a thorough understanding of an endemic disease such as pellagra can hardly leave them out of account.

In this paper our consideration of the subject must be limited to the individual in the clinic, and, as indicated, it will turn around the function of the thyroid gland. The emphasis here belongs on the word *function*. The thyroid may be slightly, moderately or grossly enlarged, and yet the function so far as measurable by the metabolic rate be not abnormal. The subject of endemic goiter, while of immense practical importance, is hardly within the scope of this paper. The fact that simple goiter can be largely prevented by the use of iodine in children and pregnant mothers has brought this condition within the field of public health activities and has added another to the responsibilities imposed on the general practitioner in endemic goiter areas; but it has little bearing on the work with the individual in the clinic further than the necessity to determine that a goiter is simple or non-toxic. Before leaving the subject of endemic goiter, a map and a table are presented to indicate the areas of the United States where the disease prevails. (Fig. 5 and Table 1.)

FIG. 5. Goiter rate per 1,000 drafted men in U. S. A., after McClendon and Williams. *Journal A. M. A.*, 1923.

Like other laboratory procedures, the basal metabolism test should be looked upon as confirmatory of clinical study and not as having the authority of a final decree. Though personally an enthusiastic follower of its uses, I believe its merits are now

TABLE 1.—*Number of instances of endemic goiter and ratio per 1,000 examinations among 2,510,701 men examined for military service in the United States during the World War (by States)*[1]

State	Number of cases	Ratio per 1,000	State	Number of cases	Ratio per 1,000
Idaho	336	26.91	Kentucky	90	1.41
Oregon	421	26.31	District of Columbia	16	1.39
Washington	832	23.40	Kansas	48	1.25
Montana	576	21.00	Arizona	10	1.21
Utah	185	15.72	New York	308	1.19
Wyoming	102	15.37	Maryland	35	.94
Wisconsin	886	14.02	South Carolina	37	.94
Alaska	16	13.14	Connecticut	32	.89
Michigan	1,131	11.43	New Mexico	9	.88
North Dakota	156	8.73	Oklahoma	44	.72
Minnesota	526	8.04	New Hampshire	6	.70
West Virginia	307	7.89	Maine	13	.66
Illinois	397	7.79	Mississippi	24	.64
Iowa	458	6.68	Louisiana	32	.62
Indiana	464	6.49	Delaware	3	.59
Nevada	21	6.48	Alabama	29	.56
Ohio	798	5.59	Rhode Island	8	.55
Colorado	119	5.29	Georgia	34	.52
California	359	4.45	New Jersey	33	.43
Pennsylvania	829	4.10	Arkansas	17	.40
South Dakota	85	4.09	Massachusetts	29	.32
Missouri	342	3.99	Texas	34	.30
Virginia	188	3.38	Florida	6	.25
Nebraska	62	2.14	State not specified	189	1.98
Vermont	18	2.14			
Tennessee	120	1.96	Total	11,974	4.35
North Carolina	100	1.61			

[1] Table 18, p. 111, of Defects Found in Drafted Men, by A. G. Love and C. B. Davenport. Prepared under the direction of the Surgeon General, M. H. Ireland, War Department, Washington, D. C., 1920.

generally appreciated, and its limitations are more in need of emphasis. Recall the factors that enter into its determination:

The patient is supposed to be in the post-absorptive state as regards the taking of food.

Muscular effort is minimized as far as may be possible.

All disturbing psychic and environmental influences are shut off in theory; but the patient's psyche is largely under her own control, if under any one's, and if saliva trickles down her throat and sets up an impulse to cough, this for the time being dominates her environment. She may be apprehensive of a test strange to her, or if it is not her first experience with it, her recollections may be full of a seeming horror.

The patient's temperature is believed to modify her metabolic rate approximately ten points for each one degree centigrade of body temperature. What should be her exact normal body temperature?

The volume of gases varies with temperature and barometric pressure, and with some other factors, such as water vapor, the last not usually taken into account.

The patient is supposed normally to consume so much oxygen per square meter of body surface. Her body surface is arrived at by means of curves worked out on the basis of height and weight. This necessarily is only an approximate method of arriving at the amount of active protoplasmic tissue.

The caloric value assigned to oxygen is an average of its heat-producing power in combination with the various food principles, carbohydrate, protein, and fat.

Females are accepted to have a normal rate about seven per cent lower than that of males. It can be only roughly true.

The rate slows with age. Without doubt it does in the average, but some women are old at thirty and others young at fifty.

The net result of the test is expressed as a definite figure. The variables introduced into the calculation make it necessary to adopt a quite wide range as normal, and this usually is fixed at minus-ten to plus-ten. It is really remarkable that a normal rate can be arrived at.

I have gone at length into what may appear to be hypercritical analysis in order to formulate an objection to a claim sometimes advanced that it is in the borderline case that the basal metabolic rate is most useful. I do not think so. A borderline reading on the plus side, if associated with a borderline clinical picture, may very properly leave the clinician in a borderline state of mind, which, it seems, is what the interests of the patient demand for the time being. Such a rate, because outside the prescribed limits of normal, does not set up a positive diagnosis in the sense that finding a few tubercle bacilli or tapeworm eggs does. On the plus side, we should think in terms of tens, not of ones. For at least two reasons, more latitude must be allowed on the plus side than on the minus: (1) The scale of abnormal range is greater on the plus side. A very high rate would be plus-100; a very low rate would be minus-40. (2) The most frequent sources of error are toward the plus side. As Means and Burgess put it, a good many years ago now: "The finding of normal rates in persons suspected of having hyperthyroidism practically rules that condition out, but the finding of an elevated rate does not necessarily rule it in." With reference to suspected overactivity of the thyroid gland, because the diagnosis is so often obvious at the bedside, experience tends to show that one of the chief uses of the metabolism test is in eliminating suspected thyroid overactivity. Very rarely should any advice be given the patient looking to a reduction of thyroid activity on the basis of the metabolic rate other than would be given without it. To put it differently, I should be unwilling to endorse a report of any plus figure without seeing the patient, but would usually accept a low or normal figure from any reliable technician who would guarantee against mathematical errors and who reported a low or normal pulse rate.

There seems to be a growing tendency to push the upper limit of normal towards 15, and to bring the lower limit of normal up to minus-5.

I have referred to the limitations of the metabolism test, especially in the diagnosis of mild cases of toxic goiter. I can more briefly declare my great faith in its helpfulness when the test is carried out with due consciousness of its limitations and liability to error, and when consistent results can be shown through repeated tests in a given case.

Thyroid Deficiency.—While it has long been known that the outspoken forms of thyroid deficiency, cretinism, myxedema, and cachexia strumpriva are characterized by low metabolism, more recently a wide and increasing range of possibilities has been opened up around the central fact that very definite thyroid lack may exist independent of the classical pictures of extreme grades of hypothyroidism. This newer body of observations has not been classified nor by any means completed.

Internists, general practitioners, and all diagnosticians are without doubt ready to welcome any positive idea that will somewhat reduce the number of so-called neurasthenics. Doubly welcome is such a concept if it carries with it a simple and efficient

remedy. Many conservative clinicians are proving to their own satisfaction that in thyroid deficiency there is some redemption from the snare of neurasthenia. More time must elapse before the real importance of mild sub-thyroid states can be estimated. Basal metabolism is beyond question a fundamental sort of thing in the physiology of health and disease; but so also are body height and weight. I am sure many of us lack patience with the notion that an individual's weight must bear some exact relation to his height in order to enjoy good health, and we should not hastily attribute illness to an individual if casually we should find his metabolic rate somewhat low or high. By "casually" I mean, for example, in a series of tests run on supposedly normal subjects. If, on the other hand, the patient comes complaining that he is sick, an abnormal metabolic rate is to be taken into account with any other available diagnostic evidence.

It is practically, if not absolutely, true that the diagnosis of thyroid deficiency may be considered established if the metabolic rate is definitely low and the administration of thyroid substance proves definitely beneficial. As doctors consulted by sick people, we are properly more interested in results than in the question as to whether a favorable result means specificity of the remedy or something more indirect.

In the matter of low body weight, it is possible that not enough care has been used to distinguish between the low metabolism of undernutrition and the low metabolism of hypothyroidism. I know of no conclusive proof that the thyroid is in any way responsible for the low heat output in experimental or pathological starvation, and it does not seem unreasonable to believe that the fire burns low as any other fire does when the supply of readily available fuel becomes low. Two cases in the service of Dr. Hunter McGuire will serve to illustrate the contrast. Both were seventeen-year-old girls with a previous average weight of about 130 pounds. Miss A had suffered a loss of 49 pounds, beginning as a voluntary reduction by dieting, which resulted in anorexia and progressive weight loss. The basal metabolic rate, which was minus-36, was brought to normal (minus-2) within two months, coincident with a gain of 34 pounds, under general treatment without thyroid medication. Miss M, on the contrary, had gained 15 pounds, presented clinical evidence of hypothyroidism, basal rate minus-32, and responded to thyroid medication according to expectation.

Perhaps it is better to regard the question of undernutrition in hypothyroidism or hypothyroidism in undernutrition as unsettled, and, furthermore, not to conclude, as yet, that thyroid medication is contraindicated in undernourished individuals with low metabolic rates. As an activator of metabolism, it may set in motion physiological processes which will result in improved nutrition if adequate food is supplied for energy needs plus storage. In such a rôle it would be looked upon more as a tonic than as a specific. However this may be, it would seem likely that differences in dosage would be needed as compared with thyroid poverty, and if this is the case, differentiation is important.

In distinction to those cases in which the thyroid is believed to play a positive rôle because of its underactivity, we have rarely found a low metabolic rate in frank cases of obesity without suggestive physical signs of hypothyroidism.

As to the conditions suggesting a low metabolism, the more characteristic special hints are slow pulse, coarse hair, heavy but non-pitting dry skin, malnutrition of the nails, sensitiveness to the perception of cold, close fatigue limits, physical and mental inertia, overweight, and a full, pudgy facial expression. More generally, whenever we have not arrived at a satisfactory diagnosis in a patient showing vague constitutional symptoms, a basal metabolism study should be made for purposes of elimination of this physiological lack.

Before leaving this phase of the subject it should be emphasized that, for some time to come, great discrimination will be required to distinguish whether a low metabolic rate and its implication as to the need for thyroid medication is the essential clue to the patient's ill health. The intriguing interest of the thyroid gland, its measurable function and its specific therapy can easily lead the enthusiast to overlook some stubborn pathology elsewhere that will not be touched, though the metabolic rate be brought to the dividing line between plus and minus.

Hyperthyroidism.—As previously intimated, I am always suspicious of a diagnosis of hyperthyroidism with a normal metabolic rate, and dubious of the benefit to be derived from treatment so directed.

At one time, and in some quarters even yet, the differentiation between exophthalmic goiter and toxic adenoma was and is considered important with special reference to the use of Lugol's solution. Now, in the eastern United States at least, the consensus of opinion seems to be that the distinction for this purpose is not important. While there are differences in their clinical course, and, as Plummer

supposes, probably in their relation to the etiologic factor, thyroxin, for purposes of diagnosis and treatment they may be considered together.

In hyperthyroidism, at the bedside the sign that correlates most closely with the metabolic rate is the pulse rate. A still better standard for comparison is obtained in the basal pulse rate, or the pulse rate observed under the basal conditions of the metabolism test. In 1920 Sturgis and Tompkins reviewed the literature dealing with this relationship, and reported the results of their own study with special reference to hyperthyroidism. They found that a general parallelism existed between the basal metabolism and the pulse rate. In all but sixteen per cent of 154 patients with hyperthyroidism there was a tachycardia of 90 or more to the minute associated with a basal metabolism of plus 15 per cent or more. On the other hand, they found that at complete rest a pulse rate below 90 per minute is seldom found, and that below 80 per minute is rarely associated with an increase in metabolism.

In 1923 and again in 1926, the basal metabolism-basal pulse ratio was plotted in two series of unselected cases, with results similar to those of Sturgis and Tompkins. These charts are shown here (Chart 2 and Chart 3) with the special object of

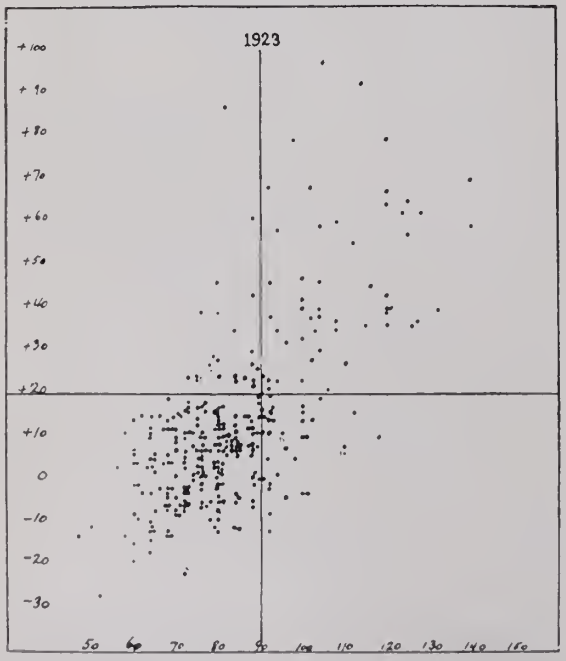

CHART 2 Basal metabolism basal pulse ratio in a series of unselected cases in 1923

emphasizing the value of the basal pulse rate as a control of the acceptability of metabolic determinations and as tending to justify the valuation put on the pulse rate in the next chart.

There are six symptoms and signs which might be called cardinal in hyperthyroidism. We may arbitrarily assign to them values as follows: Nervousness, 1; tremor, 2; loss of weight, 3; tachy-

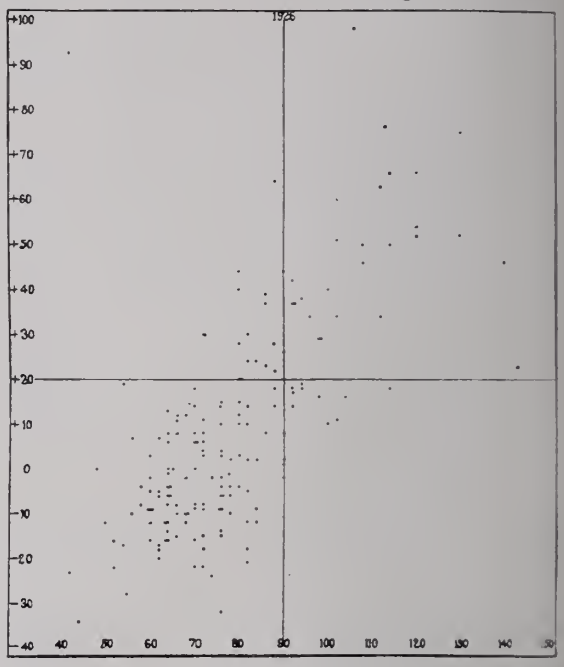

CHART 3.—Basal metabolism—basal pulse ratio in a series of unselected cases in 1926.

cardia, 4; exophthalmos, 5, and goiter, 6, making a total of 21. By this means a numerical index of symptoms is arrived at which can be readily represented in graphic form, showing the relation of the numerical index to the basal metabolic rate.

Nervousness is a subjective symptom, vague in its definition, characteristic of a wide variety of diesases, and not quantitatively measurable.

Tremor is variable, and, except when typically fine, is not peculiar to hyperthyroidism.

The standard of loss in weight used in the study represented by the chart (Chart 4) was five per cent or more of the recent normal weight of the patient.

By tachycardia is meant a pulse rate not falling below 90 under the conditions of the basal metabolic test.

The recognition of exophthalmos often involves the personal equation of the observer. If, however, a tendency is maintained to regard it absent unless positively present or plainly supported by other eye signs of hyperthyroidism, the sign is of high diagnostic importance.

The recognition of goiter is similarly involved. If the thyroid is appreciably enlarged, the degree of enlargement is of less significance as to the tone-

tional state than is the degree of the vascular activity of the gland.

From the chart it is seen that the great majority of those cases with a symptom index of 10 or less

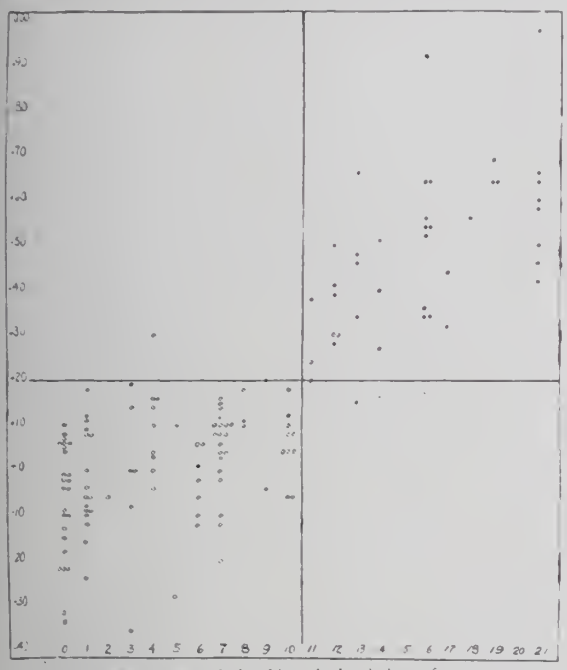

CHART 4. Showing relationship of the index of symptoms to the basal metabolic rate. The dark circles indicate the results for patients with exophthalmic goiter or toxic adenoma, and the light circles indicate the results for other subjects.

(102 cases) had a basal metabolic rate of less than plus-20 (one exception), and in only five of these 102 cases was the condition diagnosed as hyperthyroidism, though many of the patients had nontoxic goiter. On the other hand, all but four of the 45 patients with an index of over 10 had a basal metabolic rate of more than plus-20, and in all but four of these 41 cases the condition was diagnosed as hyperthyroidism. In practically all of the cases diagnosed as hyperthyroidism the diagnosis was confirmed by later microscopic examination after surgical removal of thyroid tissue. The relatively few cases running contrary to rule may have been influenced in some instances by use of Lugol's solution, but it will not be profitable to pursue this possibility further at this time.

The study suggests that the adage concerning exophthalmic goiter without exophthalmos and without goiter has little in its support. As would be expected, the diagnosis approaches certainty as the index exceeds 10.

In the absence of both exophthalmos and goiter (index 10 or less) hyperthyroidism was rarely found to exist, even though nervousness, tremor, loss of weight, and tachycardia were present.

When exophthalmos and goiter were present, other cardinal symptoms also occurred.

The absence of exophthalmos in toxic adenoma limits the total possibilities of the index in that condition, but the goiter is itself nearly always appreciable, and, if toxic, is usually associated with tachycardia and one or more of the other common symptoms.

The bedside study of the patient is a necessary check against erroneous acceptance or interpretation of the basal metabolism study as applied to the diagnosis of exophthalmic goiter or toxic adenoma.

The Influence of Work.—Possibly we do not fully appreciate what the condition of hyperthyroidism means to the patient in the matter of his expenditure of energy. We study the basal metabolism of the subject and find it elevated. Obviously, even under favorable conditions, his oxidative processes are wasteful. Now, in addition, while the rise in metabolism of normal individuals due to work is well known, the subject of hyperthyroidism pays a surtax for work. Boothby and Sandiford found that patients with exophthalmic goiter and adenomatous goiter with hyperthyroidism require nearly twice as much energy for a given piece of work as do normal persons or even patients with other diseases.

A comparison between the basal rate and the rate induced by a very moderate amount of work is seen in Chart 5.

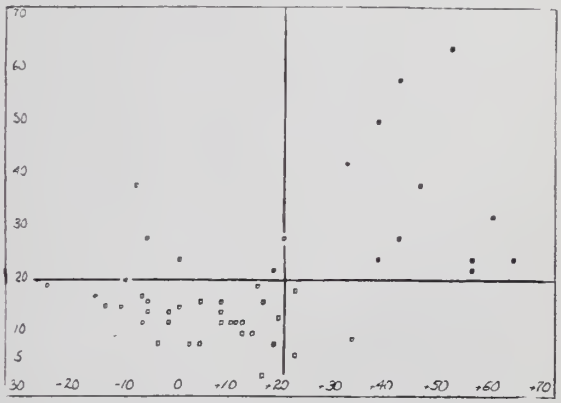

CHART 5.—Showing comparison between the basal rate and the rate induced by the load. The basal rate is scaled on the base line and the rise in rate on the vertical line. The dark squares indicate results for patients with exophthalmic goiter or toxic adenoma, the light squares indicate results for other subjects.

The *difference* between the basal rate and the work rate is plotted, and not the percentage of the patient's normal to which the rate rose. Examination of the chart reveals a marked tendency for subjects with a basal rate of less than plus-20 to show a rise under the load of less than 20 points, and for those with a basal rate above plus-20 to show a rise

of more than 20 points. In this series, again, the diagnosis of hyperthyroidism was subjected to confirmation by microscopic examination after thyroidectomy, with almost complete agreement. Though the brief description of the chart has not included the technique of the determinations, its purpose will have been accomplished if it serves to make clear what high cost of living means to the subject of hyperthyroidism.

Treatment of Hyperthyroidism.—It is beyond the scope of this paper to discuss the relative advantages of therapeutic measures in hyperthyroidism. It is almost universally admitted that Lugol's solution is of great usefulness both before and after operation. Because its effects are temporary rather than permanent, it should be reserved as a means preparatory to more definitive treatment. If operation is to be done and compound solution of iodine is given independent of the surgeon's observation of the

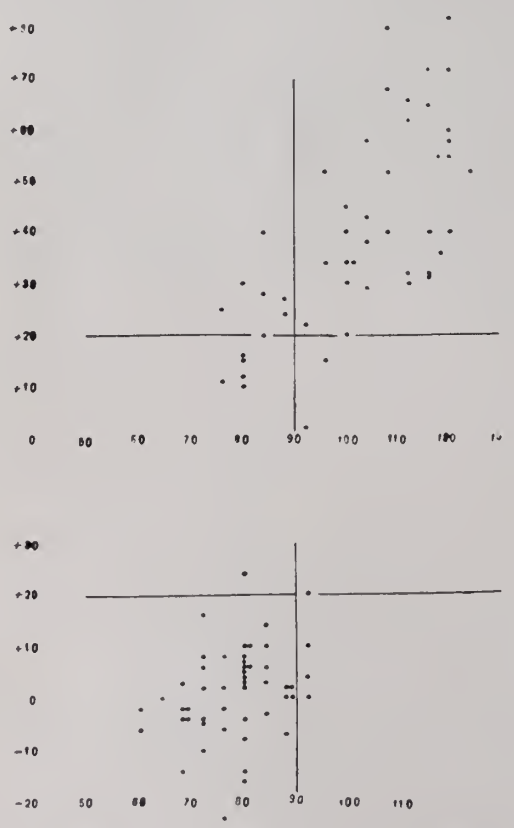

CHART 6. Basal metabolism basal pulse ratio in cases with elevated metabolic rates. Before operation, upper field; after operation, lower field.

patient, a favorable opportunity for operation may have been lost by reason of the fact that not always can the temporary benefit of the remedy be again obtained. Post-operatively, Lugol's solution tends to reduce the effect of previous toxic absorption of thyroid products prior to, during, and immediately following operation. It tends also to prevent later compensatory hypertrophy of the thyroid remnant. Its use preliminary to operation has almost elim-

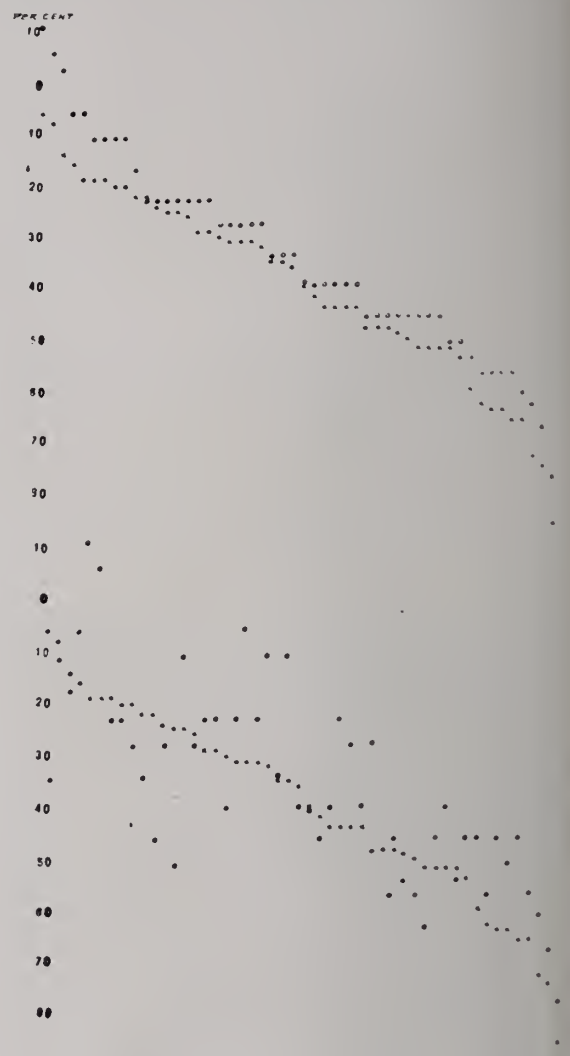

CHART 7. Percentage fall of metabolism and pulse after operation. Group correlation, upper field; individual correlation, lower field.

inated the necessity for preliminary ligations of the thyroid artery.

As between the relative merits of thyroidectomy and röntgen-ray treatment, it seems fair to say to the patient that, for the greatest certainty and promptness of results, competent thyroid surgery is the method of choice.

The chart (Chart 6) and the graph (Chart 7) shown here were prepared primarily to show the correlation between the fall in pulse rate and the fall in metabolic rate following thyroidectomy. Such a correlation is seen in a notable degree. Another,

and, indeed, a much more important observation to be made in connection with it is the highly satisfactory results of partial thyroidectomy as measured by the restoration of the metabolic rate toward normal, even within the brief period of the patient's hospital stay.

A paper so discursive as this hardly permits a summary, and certainly furnishes nothing that should be called conclusive. If the ideas advanced can be rounded up so as to bear a definite relation to the title, I would say that the basal metabolism test is the best single measure of thyroid function, but its interpretation and application require constant clinical appraisal.

FACTORS INFLUENCING THE MORTALITY RATE IN ACUTE APPENDICITIS *

By BANKHEAD BANKS, M.D.
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Acute appendicitis is the condition the surgeon most frequently has to contend with in doing emergency surgery of the abdomen, this condition comprising about ninety per cent of the pathological conditions of the abdomen requiring *early diagnosis* and *early surgical intervention.* The mortality rate in acute appendicitis, as reported in the study of a very large number of cases, is about 4.5 per cent. Other workers report the mortality as varying from three to ten per cent, and Heuer, of Cincinnati, has reported mortality of less than one per cent following operations on uncomplicated cases of acute appendicitis, while the cases complicated by perforation with peritonitis have resulted in mortality in about forty-two per cent of such cases. The number of deaths from acute appendicitis has increased during the past fourteen years. As reported at the recent meeting of the American College of Surgeons, the number of deaths due to acute appendicitis during the year 1928 for each one million of population in the whole United States was fifty per cent greater than during the year 1915. These figures are rather alarming, and since it is true, as the late John B. Murphy has said, that "some one is to blame for every death from acute appendicitis," it seems worth our while to consider the factors influencing this mortality rate. These factors may be classified as follows:

1. Pre-operative factors: (*a*) Factors controlled by the patient; (*b*) factors controlled by the physician and the surgeon.
2. Operative factors.
3. Post-operative factors.

Pre-operative Factors Controlled by the Patient or Family.—Of all factors controlled by the patient, the taking of purgatives probably causes the most marked increase in the mortality rate in acute appendicitis. The purgative habit is a most pernicious habit as acquired by the public. Notwithstanding attempted education of the public by the medical profession, the patient with abdominal cramps still very frequently takes one and possibly several purgatives before consulting a physician. It is fortunate that vomiting is present in about sixty-five per cent of all cases of acute appendicitis, and in these cases the purgative drug, being regurgitated, probably does little harm. Vomiting is one of nature's ways at combating the disease condition in the appendix region, the waves of reverse peristalsis acting to place the diseased area of the intestinal tract at rest by emptying the intestine and stomach above. Unfortunately, in a few of the cases of appendicitis with vomiting, when a purgative is taken, enough of the drug is retained to stimulate distalward peristalsis and untold damage may be done, while in the thirty-five per cent of cases showing no vomiting greater damage is done. I believe that it is a generally accepted fact that purgation causes a marked increase in the incidence of early perforation of the acute appendix. The public must be further educated by the medical profession in the dangers of purgation in a patient suffering abdominal cramps.

Another factor controlled by the patient or the patient's family is the tendency to procrastination, to put off calling the doctor until tomorrow, and then to call only when the usual gamut of household remedies has failed to relieve the "belly ache" which is usually thought due to some indiscretion in diet. Then there is the fear of operation rooted in the minds of a great many people by hearing of deaths following operations for appendicitis, and they have come to think that consulting a physician about a pain in the abdomen routinely means operation. The financial status of many families has its influence on mortality rate for many families have only the bare necessities of life and can not afford medical attendance, hospital bills and operative fees, so that the member of the family suffering an attack of appendicitis is treated by the family and the neigh-

* Read before the Kanawha Medical Society at Charleston, West Virginia, on February 18, 1930.
From the Surgical Clinic of the Charleston General Hospital.

bors, and the doctor is called only as a last resort. These families are usually larger in number of members than the families of greater financial means, so that the chance of some member or members suffering an attack of appendicitis is relatively greater. These poor people must apply to some charitable organization for aid, and the necessary operation is in many cases further delayed. The tendency of the public to consult the pseudo doctor, stimulated as it is by newspaper advertising, has its effect upon mortality rate in acute appendicitis. When such patients finally come to the surgeon, there may be rupture of the appendix with peritonitis or abscess formation.

Pre-operative Factors Controlled by the Physician and the Surgeon.—The failure to make an early diagnosis has a marked influence upon the mortality rate. Very fortunately, our general practitioners of today are well trained in diagnosis and they are well equipped for making thorough physical and laboratory examinations. Most of them have had good hospital training, where they have seen the effects of purgation and of late diagnosis and late operation. The surgeon is largely dependent upon the general practitioner for early cases, for very few patients suffering abdominal pain come directly to the surgeon. It is important for us to remember that, of all patients diagnosed by us *at operation* as suffering with acute appendicitis, only about seventy per cent will have been typical cases *pre-operatively*; that is, cases presenting all of the cardinal symptoms and signs of acute appendicitis, namely: abdominal pain, nausea and vomiting, tenderness and rigidity in the right lower abdominal quadrant, increased pulse rate, elevated temperature, and leucocytosis. It is usually not difficult to rule out the cases of acute salpingitis, acute cholecystitis, and right-sided pneumonia—conditions not requiring emergency operation—by proper and thorough physical examination; but it is the thirty per cent of atypical cases of appendicitis which cause us trouble in making an early diagnosis. The giving of morphine for abdominal pain before a definite diagnosis has been made and operation decided upon can not be too strongly condemned. Masking of symptoms results, and a very necessary operation may thereby be postponed.

It is important that we realize that there are two entirely different forms of acute appendicial disease. In *acute appendicitis* there is inflammation of the appendicial wall with resulting marked thickening of the wall, due to the deposition of polymorphonuclear white cells in the wall, and with dilated blood vessels beneath the peritoneal covering. This condition usually gives us the typical early picture of acute appendicitis, being practically always accompanied by elevation of temperature and increased leucocyte count. In *acute appendicial blockage* there is obstruction of the lumen of the appendix, due to impacted fecolith, adhesion band, or twisting. The portion of the appendix distal to the obstruction becomes distended with fecal material and gas-producing organisms, the wall is stretched and thinned out, the blood supply is interfered with, due to the rapid stretching of the wall, and there is frequently early gangrene and rupture. This condition is usually afebrile during the first eight to twelve hours, and there is frequently no increase, or only a slight increase, in the leucocyte count. It is the case of the latter type for which we must be more constantly alert in making an early diagnosis, because these cases demand immediate operation before the tense, obstructed appendix bursts, with resulting peritonitis, oftentimes fatal. All of us have seen at operation the two types of appendicial disease described above.

It is essential that there be the closest coöperation between the internist, the surgeon, and the laboratory technician, so that a quick as well as a thorough examination may be made of each case. There is a tendency today to place too much value on laboratory work. In my opinion the leucocyte count helps us very litle in making a diagnosis in a typical case of acute appendicitis, and in doubtful cases there results many times only increased doubt. A normal white blood cell count results only too often in delaying a very necessary operation. Much more important in making an early diagnosis are the things that we *hear*, *see*, and *feel*. Of course, we can not question the value of the urinalysis in ruling out urological conditions and giving us information as to kidney and pancreatic pathology, but we must remember that the urinalysis may at times be very confusing. In many cases the presence of red blood cells and pus cells in the urine specimens, together with frequent painful urination, may result in a delayed diagnosis when the underlying pathology is an acute appendix causing irritation of ureter or bladder by contiguity. After a diagnosis is made and operation decided upon, there must still be close coöperation between the internist and the surgeon, so that the condition of the patient's heart, lungs, and kidneys may be determined accurately; for only in this way can the choice be made of the proper anesthetic for the individual patient. *Selective an-*

thesia, and not routine anesthesia, should be the rule in every hospital and clinic.

Pre-operative preparation is very important, if we are to decrease our percentage of post-operative infections. If the patient is not too ill, a tub bath should be the rule—and the operative field should, in *all cases*, be prepared *before* the patient goes to the anesthetic room. The following preparation seems satisfactory:

After shaving, the field should be washed with tincture of green soap and warm water, followed by ether, a coat of 3.5 per cent tincture of iodine, allowed to dry, then removed with alcohol and a sterile towel dressing applied. In the operating room, after removing the towel dressing, a coat of iodine is again applied, allowed to dry, and then removed with alcohol. The patient must be kept warm, and, if dehydrated, fluid *must* be given in any possible way. The giving of enemata before operations for acute appendicitis is quite unnecessary and may be productive of harm and increase in mortality rate.

Pre-anesthetic medication to promote smooth induction of anesthesia is very important. The drug used, whether it be luminal, morphine, a combination of morphine and atropine or of morphine and scopolamine, should be given in sufficient dosage, about thirty minutes before the induction of anesthesia, to insure perfectly smooth induction of complete anesthesia. In this way it is in most cases possible to eliminate entirely the period of struggling and excitement while the anesthetic is being given. Otherwise, during this period great damage may be done; the acutely distended or the gangrenous appendix may even be ruptured. If novocaine is to be used either as local or spinal anesthetic, one of the barbituric acid derivatives should always be given pre-operatively in *maximum* dosage, as experiments upon animals have shown that these substances prevent the toxic action of novocaine, while morphine tends to increase this action.

Under factors controlled by the physician prior to operation, mention must be made of the fact that acute appendicitis is not a disease condition of any certain age period. Not infrequently we have seen acute appendicitis in babies of six to twelve months of age, and an early diagnosis is often more difficult in these youngsters because they are subject to gastric upsets due to many other causes. In doubtful cases in children, a rectal examination should always be made, as many early diagnoses may be made in this way. In elderly patients an early diagnosis is extremely important, for in these patients early rupture of the acute appendix is the rule. This is very probably due to the appendix not being distensible in elderly people because of the natural changes of the years or because of long-continued chronic infection, causing the appendix to be converted largely into fibrous tissue. During the past two years I have operated upon three patients, one sixty-five, one seventy, and one seventy-four years of age—all seen and operated upon in from four to twelve hours after the onset of acute symptoms, and all being found at operation to have diffuse peritonitis, due to rupture of the appendix. In none of the cases had the omentum been of any service in preventing spread of the infection. In each case the omentum was found to be very short and non-elastic. Elderly patients should be operated upon very early in suspected appendicitis.

It is unfortunate that there are still a few physicians who believe that acute appendicitis is a disease condition in which expectant medical treatment is indicated, especially if the attack is an initial attack. We still occasionally hear this line of treatment advocated. Such treatment, if carried out in any large number of cases, will result in a marked increase in the mortality rate, because true acute appendicitis is a condition requiring surgical relief in at least ninety to ninety-five per cent of all cases, and the cases responding to any other line of treatment are *probably* not cases of acute appendicitis. Early diagnosis and early operation must be the rule if our mortality rate is to be decreased. It is much better to open the abdomen on a mistaken diagnosis than to wait for nature to take care of an acutely diseased appendix which, in the vast majority of cases, will in a short time become gangrenous or ruptured. The use of the ice-bag and morphine to delay operation is a very dangerous procedure, and the ice-bag has no effect upon the inflammatory process within the appendix.

Operative Factors.—There are many factors in this group causing an increase in the mortality percentage, all being under the control of the surgeon. Selection of the type and site of incision suitable to the particular case in hand is very important. No two cases of acute appendicitis are exactly alike, and so no one type of incision and no one site for the incision can be best suited to all cases. After the patient is sufficiently anesthetized to completely relax the rigidity of the abdominal muscles, the acute appendix can usually be felt through the wall on palpation and the incision calculated to afford the best exposure can be made. With an incision just

over the diseased appendix, much quicker removal can be accomplished with the minimum of trauma, and it is not necessary to have a long incision. The acute appendix is not by any means always situated in the classical spot just under McBurney's point, but may be in many cases located in the left lower abdominal quadrant, in the pelvis, retrocecally and retroperitoneally, and even high in the right upper abdominal quadrant. After the desired relaxation is obtained, if palpation fails to show the location of the acute appendix, and if rectal examination has previously failed to show its location, we are fairly safe in assuming that the appendix is retrocecal or even retroperitoneal in position, or that the case is not one of acute appendicitis. In either event an incision can then be made to allow for thorough exploration. There should be no stereotypy in the matter of making incisions, just as there should be no routine anesthesia. Of all incisions, the incision made over the right rectus muscle parallel with the muscle fibers, but with the muscle retracted *laterally*, will prove most useful in a majority of all cases of acute appendicitis, because this incision possesses the following advantages: It gives excellent exposure and may be enlarged to suit the case or the operator; closure is easy; the blood supply to the muscle is interfered with but little and the nerve supply not at all, so that healing is better and hernia is not so likely to follow. After the incision has been made through the skin and subcutaneous tissue, the skin edges should be thoroughly covered with moist towels or packs, held in place by interrupted catgut sutures placed through the subcutaneous tissue just above the outer fascial muscle covering. The towels are best sutured in place before the fascia is incised, and in closing the wound they are not removed until the fascia has been closed. In this way the deep structures and the peritoneal cavity are protected from contaminating organisms definitely proved to be ever-present in the cut skin edges. Towel clips may be used to hold the towels in place, but there is always the possibility that they may become loosened and thus cause a break in technique or even damage to intestine. Skin clips may be lost in the wound and, therefore, should not be used to hold towels in place.

Unnecessary trauma will increase mortality. Trauma undoubtedly has a great influence in increasing the incidence of fatal post-operative embolism. This applies to trauma of the abdominal wall, the diseased appendix, and other intraperitoneal structures, as well as to trauma of the vessels and other structures situated retroperitoneally. Clean-cut dissection of all tissues *must* be the rule. Unnecessary trauma of the wound may be caused by the use of retractors, especially those of the self-retaining type; by the use of dry gauze sponges and packs, by the injudicious use of instruments, and by the hands of the operator and his assistants. Wound retractors need not be used if the incision has been made directly over the diseased appendix, and with an incision so made it is seldom necessary to use intraperitoneal gauze packs, because the appendix is usually easily delivered through the incision, and protection of the wound with *wet* gauze packs is all that is then necessary. Of course, there are many cases in which failure to protect the small intestine and peritoneal cavity by packing might well prove fatal, but the experienced operator, on inserting his hand into the peritoneal cavity, has no difficulty in quickly recognizing such cases. If packing is necessary, small, wet gauze packs, or, better still, rubber tissue packs should be used. The intestine should never be subjected to the trauma of dry gauze packs and sponges, or to unnecessary handling by the surgeon or his assistants, because these factors may cause irritation with resulting adhesions and possibly even intestinal obstruction. All packs and sponges must be correctly counted and accounted for. The surgeon, on opening the peritoneum, must be very quick to size up the situation, to decide whether the case is complicated or uncomplicated, and then to institute quickly the proper surgical measures; and it is in this that the surgeon doing a great many operations for acute appendicitis has a distinct advantage over the physician who does only occasional operations for the same condition. The man of greater experience deals with surgical difficulties daily; therefore his judgment and his technique are constantly kept up to a high point of development. The acutely inflamed or gangrenous appendix may be most difficult of removal, but thorough mobilization of the appendix will often render the difficult case much less difficult, and this can usually be accomplished by cutting the congenital mesenteric fold frequently found binding down the middle third of the organ. This may be done without fear of hemorrhage, as this ligamentous attachment is practically bloodless. There are many other little things which will help to make a safer procedure of removal of the acutely inflamed appendix. The following things, while seemingly trivial, are mentioned because all of us have at some time seen and perhaps even made mistakes which may have proved fatal to

the patient. If the appendix is wrapped in omentum it should be left so and the protecting omentum excised with the appendix. If we attempt to peel the adherent omentum from the appendix, we may very easily rupture the appendix. The appendix should be wrapped in a wet salt sponge and so held, as the use of a traction clamp on either the edge of the meso-appendix or the appendix may cause perforation. The meso-appendix is frequently very edematous, so that fixation sutures of No. 2 plain catgut will need to be applied to control bleeding from its cut edges. The appendix base should always be ligated, and inverted if possible, after the appendix has been excised with the electrocautery. If it proves impossible to invert the stump, it should be peritonized to prevent adhesions between it and the small bowel. I have seen one case of fatal peritonitis due to failure to invert or protect the appendix stump, and one case of intestinal obstruction definitely due to a loop of the distal ileum having become adherent to an uninverted stump. Many mortalities of undetermined cause may be due to failure to carry out the simple expedients of inverting the appendix stump and of very carefully peritonizing all raw surfaces.

When the appendix has gone on to rupture with peritonitis or abscess formation, the mortality rate following operation will increase. The question of drainage or non-drainage in peritonitis will always remain a disputed one; but I believe that we should lean strongly toward non-drainage—certainly so in cases of localized or early diffuse peritonitis, when it is possible to remove the cause. We know definitely that there will be, in many cases with a gangrenous appendix or an *early* ruptured appendix, cloudy "pea soup" fluid filling the peritoneal cavity. Drainage is usually not required in such cases if the fluid *has no foul odor* and *is not under markedly increased pressure*. This fluid is protective, being thrown out by nature—the first stage in the establishment of protective plastic adhesions to wall off the infection which is still at this stage localized within or very closely about the appendix. Cultures made from such *odorless fluid not under pressure* will, in most cases, show no organisms present. The peritoneum will take care of an immense amount of irritation and even infection, provided no foreign body be introduced to cause increased irritation. In all of such cases, after the peritoneal cavity has been flushed gently with warm normal saline, the simple expedient of placing a protective tissue drain extraperitoneally along the suture line in the peritoneal closure will provide all of the protection necessary. Cases in which the peritoneal fluid *is foul of odor* and *under increased pressure* should be drained. Drains placed near the small intestines will, unless protected by omentum, cause an increase in morbidity and in mortality rates. It is much safer to place drains well out in the right or in both flanks, protected if necessary and if possible by omentum.

In dealing with the appendix abscesses, careless palpation or the attempt to remove the appendix will cause many mortalities. It is extremely difficult in many cases to decide whether we are dealing with a large, omentum-wrapped, acute or gangrenous appendix, or with an abscess. It is better, in such cases, to lean toward conservatism and to place a drain through the flank down to the mass, rather than to risk the breaking up of protective adhesions and rupture into an abscess cavity with resulting peritonitis and possibly mortality. This draining of appendix abscesses by the process of chemotaxis is life-saving in many cases. Many patients so treated may require second operations because of subsequent attacks of appendicitis with or without abscess formation. It is, in my opinion, a serious mistake to assume that one attack of acute appendicitis, with abscess formation *properly drained* without removal of the appendix, precludes the possibility of subsequent similar trouble in the appendix region. This assumption seems to be based upon the theory that the lumen of the appendix is obliterated by acute inflammation with perforation and abscess formation. In reviewing the pathological reports covering four recent cases in which the appendix was removed during the quiescent periods following one or more drainage operations in each case, I find the lumen of the appendix patent in all except one in which it was partially obliterated, and with all specimens showing evidence of previous acute inflammation and perforation. To impress upon you my opinion in this matter, I wish to quote no less an authority than Sir Berkeley Moynihan, who has stated, in regard to the recurrence of appendicitis after an abscess of the appendix has been drained, that "Coley, as the result of the examination of a large number of cases, has estimated that twenty per cent will have recurrent acute attacks, and that this estimate is perhaps high; but at least ten per cent of patients suffer from attacks of appendicitis following drainage of an appendix abscess, and a secondary operation will be needed, this being best performed in the quiet interval after an attack, when the risk

is very small." The removal of the appendix in such cases during a quiet interval after an attack is not a difficult operation in the majority of cases. All patients who have had drainage of an appendix abscess without removal of the appendix should have *very careful* and *explicit information* that the appendix has not been removed, that they may have recurrent acute attacks, and that it is safer for them to return for removal of the appendix after a reasonable time has elapsed since the drainage operation; provided, of course, that there are no serious contraindications to such an operation. This seems better than to allow the patient to run the risk of subsequent acute attacks with danger of abscess formation, peritonitis, intestinal obstruction, and perhaps even mortality.

In closing wounds, the peritoneum should always be sutured with the "sunny side" out. This principle, as well as that of peritonizing all raw surface, has for some time been advocated by my surgical associate, Dr. John E. Cannaday. Even with this precaution trouble occasionally follows, for I have seen several cases in which intestinal obstruction was definitely due to a loop of ileum having become adherent to the under surface of the peritoneal suture line, and I have been forcibly impressed by noting, in a great many patients coming to second operation, that we find the omentum densely adherent to the old peritoneal suture line, denoting, to me, irritation or raw surface there following the previous operation. This irritation is possibly due to the use of chromicized catgut as peritoneal suture. The omentum, even when present, is not always so accommodating; but small intestine seems to have a great habit of attempting to wall off raw surface. To prevent this, it seems good technique for the operator, in closing the peritoneum, to anchor the omentum to the under surface of the suture line, if this be possible. The use of non-absorbable through-and-through tension sutures is in most cases unnecessary, and may cause increased morbidity because of wound infections, and perhaps even an increase in mortality rates. While using such stay sutures and while observing other surgical cases in which these sutures were used, I have noticed that almost every case has shown a small amount of infection present about each such suture, and deep infections have been noted in several cases following removal of the sutures. I know of two deaths apparently due to pulmonary embolism following *immediately* upon the removal of such sutures. In muscle-retraction incisions, stay sutures are unnecessary. In all wounds, accurate hemostasis is very important; but the ligation of large masses of tissue must be avoided.

In treating cases of definitely diffuse peritonitis due to rupture of the acute appendix, I believe that we should carry out Oschner's well-known treatment in the vast majority of all such cases. The method, plus the use of autogenous or stock vaccines to hasten or to increase immunity, should markedly decrease mortality. In operating upon most cases of diffuse peritonitis seen *after the first forty-eight hours*, we are merely upsetting nature's efforts to handle a very serious, near-overwhelming disease.

Post-operative Factors.—The use of tight adhesive or other forms of abdominal strapping or binding post-operatively is quite unnecessary. They only make the patient uncomfortable, and should be avoided. Especially is it important that chest movement should not be lessened in any way. Very careful nursing care is very important. Following operation the patient should be placed in bed in the recumbent position or head-lowered position, lying on the right side. The position must be changed frequently, but the patient must not be allowed to stay upon the back until after consciousness and reflexes have been fully restored. Following reaction there must continue to be frequent changes in position, the patient being urged to turn himself and to early begin active movements of the arms, legs and thighs to prevent slowing of the circulation and possible thrombus formation in the veins of the pelvis and lower extremities. It is very important to keep the post-operative patient as comfortable as possible. More attention should be paid to the correct balance between intake and output of fluids. Food by mouth, allowed too soon after operation, may make the patient very uncomfortable by causing distention, which condition may even be a factor in the production of ileus. Metabolism and nutrition must be maintained if necessary by food given in other ways.

Purgation post-operatively can not be too strongly condemned; being, in my opinion, a factor causing an increase in mortality rate. Nature should be given every possible chance to restore the intestinal tract to a normal state of muscle tone and peristalsis. It is usually not necessary, or even desirable, that the patient have evacuation of the bowels during the first three days following operation for acute appendicitis. Especially is this true in cases of peritonitis, in which the effort should be made to place the intestinal tract at physiological rest. A post-

operative patient whose intestinal tract is verging on the condition of paralytic ileus may easily have this condition produced by purgation; while, if allowed to go without purgation, the bowel will in most cases regain its normal muscular tone. Enemas given early after operation may be productive of distress to the patient, while if given in large amount they may be productive of actual harm. After the third post-operative day the patient has no trouble in expelling enemas, and small (one pint) enemas will prove sufficient to keep the patient comfortable.

Early recognition of the post-operative complications of paralytic ileus and mechanical intestinal obstruction will, with the institution of proper relief measures, result in a decrease in mortality rates. Early enterostomy will prove life-saving in many such cases, while late enterostomy will, in almost as many cases, prove futile. Following enterostomy, fluids must be forced, and saline solution must be given in sufficient amount and concentration to maintain the blood and tissue chlorides at or above a normal level. Even with the above treatment many cases of intestinal obstruction will terminate in fatality. Wilkie, of Edinburgh, has recently called our attention to this fact; and, knowing from animal experimentation that high obstruction with immediate drainage of the bowel is not survived for a much longer period than obstruction without drainage, he has suggested a technique for the performance of entero-colostomy or entero-enterostomy which has, in his cases, markedly decreased the mortality rate following upon intestinal obstruction. Wilkie asserts that death in many of these cases is due to deprivation of the bowel below the obstruction, by way of the enterostomy tube, of the fluid, enzyme, ferment, and chemical-containing gastric and intestinal content in which the mucosa of the bowel is normally accustomed to being bathed, as well as to robbing the system of fluid and other substances normally absorbed by the large bowel. In mechanical intestinal obstruction (as in appendicial abscess formation) rubber-tube enterostomy should be done by the usual method just above or proximal to the obstruction, while in high obstruction and obstruction due to paralytic ileus rubber-tube jejunostomy is performed; and a second tube is inserted into the bowel just distal to the obstruction, or into the head of the cecum, both tubes being protected by omentum, if possible, and brought out through separate incisions and connected by a glass connecting tube. In this way the content of the upper digestive tract is drained into the large bowel, and, in addition, fluids may be given freely through the lower enterostomy tube or the cecostomy tube.

The use of spinal anesthesia, while possessing many advantages in cases of simple acute appendicitis, may cause us considerable worry during the first twenty-four hours after operation, because of marked abdominal distention. This is really a condition of paralytic ileus, but it is, in my opinion, due to the use of spinal anesthesia, and the bowel regains its tone after thirty-six to forty-eight hours. To understand the working of this reaction we must know the nerve supply controlling intestinal peristalsis. Briefly, it is this:

1. The myoenteric nerve system, known as Auerbach's and Meissner's plexus of nerves, is found in the muscular walls of the intestine. This is a primitive nervous system, having only *one* reaction; *i.e.*, contraction above and relaxation below points of stimulation. This system is *not* blocked by spinal anesthesia.

2. The parasympathetic system is a part of the central nervous system. The vagus nerve arises from the mid-brain and sends fibers to the small intestines, the ascending and transverse colons. Stimulation of the vagus causes increased contraction of the whole of the small intestine, and of the ascending and transverse colon. The vagus fibers are *not* blocked by spinal anesthesia. The pelvic nerve arises from the sacral nerves and supplies fibers to the remainder of the large bowel and to the anal sphincter, and *is* blocked by spinal anesthesia.

3. The sympathetic system sends fibers to the intestines, these fibers arising from the lower thoracic and the upper lumbar segments of the cord. These nerve fibers inhibit intestinal peristalsis, and *are* blocked by spinal anesthesia.

When the fibers of the sympathetic system (*i.e.*, the peristalsis inhibitors) are blocked, the vagus fibers and the nerve fibers of the plexus of Auerbach and Meissner unaffected by spinal anesthesia are allowed full sway, causing tonic contraction of the walls of the intestines, which renders operation much easier because of excellent relaxation. Spinal anesthesia used in uncomplicated cases of acute appendicitis should cause a decrease in mortality rate, because of the perfect relaxation provided, so that handling and traumatizing the intestines is rendered unnecessary. The post-operative ballooning of the intestine following spinal anesthesia is probably due to a temporary paralysis of the intestinal muscle following upon the state of tonic contraction caused by spinal

anesthesia. After the necessary period of rest, muscle tone is restored and the normal balance between the three nerve-supply systems slowly is restored to its normal state.

I have purposely gone into detail in citing the cause of this post-operative, spinal-anesthetic abdominal distention, because it is very important that we understand the difference between this condition and post-operative obstruction due to ileus or to mechanical obstruction following the use of other anesthetics. Paralytic ileus following upon operations for acute appendicitis is usually due to trauma of the intestine or to peritonitis. In either event there is a disturbance of the normal balance existing between the three nerve systems controlling intestinal peristalsis. There may be (1) paralysis due to traumatism of the nerve plexus of Auerbach and Meissner, or (2) paralysis due to overstimulation of the sympathetic system (the peristalsis inhibitors) by trauma, peritonitis or hemorrhage. In either of the latter events spinal anesthesia will cause intestinal peristalsis, and decrease in abdominal distention by blocking the sympathetic or inhibitor fibers, and the fibers of the pelvic nerve, causing relaxation of the rectal sphincter, thus allowing the passage of gas or feces, because with the inhibitor system blocked there remain unaffected by the spinal anesthetic both of the peristalsis stimulator nerve systems, *i.e.*, the vagus fibers and the myoenteric fibers. So we see that spinal anesthesia provides us with a very simple method of treating paralytic ileus as well as a means for the early differentiation between paralytic ileus and mechanical intestinal obstruction, and its use should cause a decrease in mortality rates. To understand clearly the difference between post-operative acidosis and alkalosis, to diagnose definitely one or the other, and then to institute the proper combative treatment, will decrease mortality.

Finally, I wish to mention the post-operative diagnosis, as opposed to the pre-operative diagnosis; for only by the absolutely correct recording of such data in every case operated upon for acute appendicitis can we arrive at a true estimate of mortality. Many cases may be operated upon with no abnormal intraperitoneal findings; post-operative deaths in such cases should be credited to mistaken diagnosis, even at the expense of the diagnostic ability of ourselves and our colleagues. Deaths in cases operated upon for acute appendicitis, with findings of such conditions as acute tubo-ovarian disease or acute cholecystitis where the offending tubes or gallbladder are removed during the acute stage, should be credited to mistaken diagnosis or to faulty surgical judgment; for it is a well-known fact that the removal of such organs in the stage of acute inflammation is followed by mortality four times that following operations upon such cases after the subsidence of the acute inflammation. In many of such cases the appendix may be secondarily involved, but the removal of the acute tubes or gallbladder is the operative factor causing increase in mortality.

Conclusions.—1. The number of deaths from acute appendicitis has increased fifty per cent during the past fourteen years.

2. There are many factors influencing this mortality rate, and these factors are taken up under pre-operative, operative, and post-operative classification.

3. Early diagnosis and early operation must be the rule if the mortality rate is to be decreased. Operation in uncomplicated cases of acute appendicitis should be followed by mortality in less than one per cent of all cases, while the complicated cases will be followed by mortality in perhaps fifteen to forty per cent of such cases.

4. Medical treatment of acute appendicitis, and the use of morphine and the ice-bag before a definite diagnosis is made, can not be too strongly condemned.

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RECENT WORK ON THE CANCER PROBLEM *

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In late years the repeated international conferences on cancer have done much to further coöperation and to keep individual workers in this field abreast of current happenings. A personal visit to the laboratories of the various large centers for cancer investigation in Europe, however, affords the special advantages of more intimate contact with the many problems under inquiry. For this reason it is deemed worth while to present here a review of the findings of a personal tour of European cancer laboratories completed in the last few months. In making such a report, there has been kept in mind similar reviews

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of visits paid to the same laboratories by other workers and published some five or six years ago. This has made possible a comparative view of the progress made, and has urged more caution in avoiding any personal opinions entertained by the reviewer and has increased the effort to catch the spirit and aim of the individual investigators interviewed.

I. WORK ON THE CAUSE OF CANCER

Progress in the realm of cancer research appears to be dependent upon a gradual accumulation of facts rather than upon revolutionary and outstanding discoveries. The accumulation of this information necessary to the support or revision of current conceptions in regard to the cause of cancer requires new methods of research and experimentation, and it is in the gradual extension of such available methods that the greatest progress toward the goal of solving the cause of cancer is being made. Thus, in the past decades methods of cancer investigation have passed from the pathologic techniques of dead and fixed specimens to animal experimentation, and in more recent years from animal experimentation to a direct study of human material in its living state in the form of cell suspensions and possibly to tissue culture. It can not be said, therefore, that work on the cause of cancer is at a standstill merely because no new principle of tumor origin has been demonstrated. Thus, a survey of the cancer laboratories in Europe reveals uncertainty and speculation in regard to the cause of malignancy, and yet there is evidence everywhere of an attack upon the problem along more fruitful and scientific lines. The experimental methods used, and not the theories of cancer met with, will therefore receive chief emphasis in this report.

Two main lines of inquiry which have occupied the center of attention of workers on the cause of cancer for some years are the result of experimental work on laboratory animals (including mice, rats, and chickens). One of these lines of inquiry is directed toward the analysis of so-called carcinogenic agents such as the coal-tar derivatives, and is based on the experimental production of carcinoma in rats and mice by skin irritation with these injurious agents. The other field of inquiry is directed toward the analysis of tumor filtrates in the search for a filtrable virus or some growth ferment, and is based upon the laboratory procedure of transferring the Rous chicken sarcoma from fowl to fowl by means of a cell-free filtrate prepared from the tumor. The older field of experimentation is with tar cancer.

Carcinogenic Agents.—Dr. Ernest L. Kennaway, chemical biologist at the Cancer Hospital Research Institute in London, is continuing his experiments with cancer production in mice by means of coal-tar derivatives. Attempts have been made to produce effective carcinogenic agents in the form of synthetic compounds, in the hope of disclosing some common chemical basis to all of the cancer-producing irritants. So far, in the Cancer Hospital laboratories they have never produced cancer in an animal by any pure chemical substance. One branch of their work has been stimulated by the occurrence of bladder cancer in dye workers, but their attempts in the last five years to produce bladder cancer in mice and rates by dye injections have not been successful.

Workers in other laboratories, such as Dr. Carminati, working under Dr. Petro Rondoni, professor of experimental biology in the Victor Emmanuel National Institute in Milano, are conducting similar experiments with the coal-tar derivatives. However, in most of the European cancer laboratories the attitude toward this field of investigation is one of disappointment. This attitude does not detract from the value of tumor production by carcinogenic agents as an experimental method, for it is proving a valuable tool in the hands of many investigators for the study of the earliest stages of cancer formation.

From the standpoint of cancer causation, the results obtained from this method of tumor study lend weight to the time-worn theory of Virchow that chronic irritation in tissues is a factor in cancer production, and would seem to indicate that the specific feature resides in some tissue change induced, rather than in the physical or chemical property of the injurious agent. No light, however, has been thrown upon the mechanism whereby the cancer change is instituted. One significant limitation of this method is that it is practically confined to tissues of epidermal origin and has not been successfully applied to internal organs, such as the stomach.

Tumor Filtrates.—By far the most prevalent mode of study of the origin of cancer is that conducted upon tumor filtrates with the Rous chicken sarcoma. The malignant nature of this tumor, as well as its inoculation from one fowl to another by means of a cell-free filtrate, are generally accepted by all cancer workers as proved. The search for the potent factor in the filtrate, however, continues. The hypothesis entertained widely some five years ago, that the specific agent in this filtrate was some form of filtrable virus, has been abandoned in prac-

tically all of the large centers of cancer investigation. The renewed interest in this subject has come from the experiments of Murphy at the Rockefeller Institute in New York, and of Luther Heidenhain in Worms, Germany.

Since Murphy startled the London Cancer Conference in 1928 by announcing that he had demonstrated by experiments on the Rous sarcoma that cancer is caused by a ferment, many workers have sought to confirm his results. Among those engaged along these lines are Charles Sternberg in Vienna, Max Borst in Munich, Archibald Leitch and James Murray in London. Murphy based his conclusions upon the production of sarcoma in chickens by the injection of normal testicular extract. Leitch achieved the same results by injecting the extract of normal pancreas into fowls. But neither Murphy nor Leitch have been able to repeat their own experiments with constant results, and the work of other investigators has led to the conclusion that the effects of the extracts thus prepared were entirely non-specific and the tumors produced either a chance occurrence or the result of contamination with the Rous sarcoma filtrate. A similar interpretation is being placed upon the experiments of Carrel, who obtained sarcoma in fowls by injection of arsenic and indol.

The work on cell filtrates in cancer has been practically limited to the chicken and the production of chicken sarcoma, and for this reason skepticism is beginning to grow in regard to the conclusions drawn by experimentators in this realm in regard to human cancer. However, the work of Luther Heidenhain has been advanced in support of the conception that tumor filtrates have a wider significance. Heidenhain prepared an extract from human chondrosarcoma and produced an adenocarcinoma by injecting it into mice. On successive transplantations, this adenocarcinoma finally showed cartilaginous deposits and Heidenhain concluded that a specific tumor-producing agent had been present in his filtrate. This work of Heidenhain has not yet been confirmed. Borst in Munich, although skeptical, believes the experiments worthy of repetition. Charles Sternberg in Vienna was favorably impressed; but Blumenthal in Berlin and Murray in London are inclined to the belief that the mouse tumor of Heidenhain was a sontaneous occurrence and not the result of the filtrate prepared. It is hoped by some observers, such as Borst of Munich, that the Heidenhain experiments will bring the question of tumor filtrates to a crucial test and determine whether or not this line of research is applicable to human carcinoma. Certainly, in view of the great vogue that the Rous tumor experiments have been enjoying, it is time that some reliable check was made to determine the value of the results obtained, from the standpoint of human malignancy.

Tumor Metabolism.—The extension of biochemical methods to cancer investigation is large, due to Otto Warburg and his co-workers in the Kaiser Wilhelm Institute of Biology in Berlin. Warburg, by an application of the manometric methods of gas analysis of Barcroft to tumor tissues in physiologic solution, has contributed valuable measurements on the metabolism of living tumor cells. These experiments, conducted over a period of the last six years, have shown that tumor cells utilize carbohydrate by two methods. One of these, the combustion of sugar by means of the oxygen breathed, is ærobic; the other is anærobic and consists of splitting sugar to lactic acid (glycolysis) in the absence of oxygen. Both methods of carbohydrate metabolism are found in all tissues but cancer tissue, according to Warburg's findings; is unique in the magnitude of its glycolysis, and, even in the presence of oxygen, this form of carbohydrate metabolism predominates, with the formation of large quantities of lactic acid, which accumulate in a manner not found in other tissues. This glycolytic capacity of tumor tissue enables it to survive under anærobic conditions, and upon this finding and the fact that embryonic tissue also has a high rate of glycolysis, Warburg has constructed a metabolic theory of tumor origin. He postulates that embryonic cells are sprinkled throughout normal tissue (probably for purposes of repair), and that when the tissue is subjected to an oxygen want by sclerosis of the vessels, injury, etc., the embryonic cells undergo a selective adaptation due to their glycolytic powers, and are capable of survival and perpetuation while the normal cells perish. These surviving embryonic cells with unusual glycolytic capacities constitute the malignant tumor.

Warburg's experimental methods have been applied to the cancer problem by various observers, such as Robert Bierich in Hamburg; Dickens, working under Professor Dodds at Middlesex Hospital in London; Crabtree, with Murray in the laboratories of the Imperial Cancer Research Fund in London, workers with Borst in Munich, and others. The measurements made by Warburg on cell metabolism are generally agreed to; but their specificity for cancer, as well as their theoretical implications, is

the subject of serious contention. Dodds and Dickens, at the Middlesex Hospital, are inclined to support Warburg in all but his theories in regard to cancer origin. On the other hand, Borst in Munich and Crabtree in London do not find that the metabolic features emphasized as the peculiar property of cancer by Warburg are specific for cancer. Warburg himself found retinal tissue to be an exception, and Crabtree has cited numerous infectious overgrowths with identical metabolic features. Robert Bierich is an outstanding opponent to many of the tenets of Warburg. Bierich has repeated the experiments of Warburg and agrees with him that there is an unusual accumulation of lactic acid in cancer tissue. But, unlike Warburg, Bierich holds that the glycolytic rate of cancer tissue is normal, and that the unusual amounts of lactic acid are due not to its rapid formation but to the inability of the malignant cell to resyntheticize this acid to glucose. Bierich holds that glycolysis is a normal metabolic method in cancer and in all tissues, and points out that the lactic acid thus produced acts as a normal physiologic stimulus initiating such processes as muscular contraction, glandular secretion, and "thinking" in the brain cell. In malignancy, however, Bierich finds in lactic acid an agent whereby cancer tissue is able to destroy the collagen fibers of normal connective tissue boundaries and thereby assist in the dissemination of the new growth. Bierich has confirmed this action of lactic acid on the collagen fibers experimentally. He holds that the findings of Warburg in regard to lactic acid in cancer must be considered merely as a symptom of the malignant cell and by no means the key to the essential nature of the cancer condition.

While it is evident that the specificity and the interpretation of the Warburg findings are open to conjecture, the applications of his experimental methods to cancer are being perfected and extended so that a steady growth of valuable information in regard to the metabolism of tumors can be expected. The impetus thus lent to the employment of biochemical methods in the study of the origin of cancer is, perhaps, Warburg's most important contribution.

General Systemic Causes in Cancer.—It is surprising how many workers are turning to the view that cancer begins as a general systemic disease, and this in spite of the clinical fact of repeated cures by amputation or local excision of the growth. Behind this belief is the gradual accumulation of evidence pointing to the fact that a complex of causes must be present to initiate malignancy. This point of view is suggested by the failure of experimentation to isolate a single invariable factor in the origin of cancer. Although tar derivatives will precipitate a skin tumor in mice, these injurious agents are neither constant nor essential factors, as we have seen in the investigations cited; and in the same way, although a filtrate will transmit chicken sarcoma, it is insufficient for the perpetuation of tumor transplants in other animals. The analysis of human tumors by pathologic methods has similarly failed to yield a uniform incipient stage, and only occasionally are embryonic rests or some factor such as trauma to be found in the history of the case.

European investigators find little satisfaction by calling into play an hereditary predisposition, and the experiments of Maude Slye in America bearing on this point are received with much skepticism. The formulation of other general systemic factors, however, is proceeding with great difficulty.

Some investigators conceive of resistance to cancer in terms of the reticulo-endothelial system, and it is intimated that in some way a suppression or overtaxation of the functions of this system predisposes to cancer. In support of such a conception, Brüda at Graz, Austria, working in Pfeiffer's clinic, has injected foreign particles (such as india ink and trypan blue) into mice in order to saturate the reticulo-endothelial system and throw it out of function. He believes that he has demonstrated that these animals are more susceptible to cancer transplants than the controls. Charles Sternberg at Vienna, however, has been unable to confirm these results. (As will be shown later, the work of Brüda is diametrically opposed to that of W. Munck, who claims to have produced a retarding influence on the growth of transplanted tumors in mice by use of the same particles—trypan blue—as a chemotherapeutic agent.) H. Aulen, in Blumenthal's clinic, is devoting himself to a study of the serum and immune reactions of the blood of cancer patients in the hope of demonstrating some factor in the general circulating important in the causation of cancer. He believes that he has found a basis for the assumption that cancer is a general systemic disease in the behavior of the serum of cancer patients in the presence of cancer cells. The nature of these reactions will be disclosed in a forthcoming publication in the *Zeitschrift für Krebsforschung.*

No discussion is given here of the influence of the endocrine organs on the origin of cancer or the theory that a general infestation with some virus is

a fundamental factor in cancer causation, as no experimental work in the support of either hypothesis has been met with. It is important to note here, however, that many workers are tacitly couching their conceptions of the resistance or non-resistance to cancer in terms of immunology borrowed from the field of bacteriology, although most of them are unwilling to admit for cancer an infectious origin.

Tissue Culture of Tumors.—At the time of the present writing no one has yet succeeded in maintaining a culture of human tumor cells; but the tissue culture of animal tumors is being practiced and improved in most of the large cancer laboratories in Italy, Germany, England, and France, with a few outstanding exceptions. The newer methods of using heterogeneous sera (sera from several different animals in the culture fluid) and Albert Fischer's method of growing an admixture of connective tissue cells with the tumor to prevent autolysis of the media, seem to offer definite hopes for the future culture in vitro of human tumors. The perfection of such a technique should prove a valuable experimental method in cancer study, since it would permit manipulations upon living human tumor cells not feasible in the patient.

While most of the tissue cultures of tumors have been utilized in testing proposed therapeutic methods, some of the experiments in this field have been directed toward solving the cause of cancer. Dr. Klee-Rawidowicz, working with Dr. Hirschfeld at the Universitats Instituts für Krebsforschung in Berlin, finds that the repeated culture and subculture of rat and chicken sarcoma may be maintained for a year outside of the animal body and the final cultures reinoculated into animals without change in the properties of the tumors thus produced. This ability of the original tumor to maintain its characteristics in isolation outside of the animal body seems to speak against any systemic controlling factors and favors the view that cancer is a local tissue disease at its inception. The extent of the experiments in this direction is yet by no means conclusive.

II. WORK ON THE DIAGNOSIS OF CANCER

No new form of cancer diagnosis applicable to all forms of malignancy has been added in recent years, and no one form of diagnosis has proved sufficiently accurate to displace the element of personal judgment. The quest has therefore been in the direction of more accurate and more widely applicable methods, and in this quest the viewpoints of internist, radiologist and surgeon have coöperated.

In the realm of the internist or specialist, the bronchoscope, the proctoscope, the esophagoscope, the cystoscope, and other methods for the direct visualization of internal organs have done much for the early diagnosis of cancer in the regions of the body where such instruments may be utilized. The specialization required for the use of most of these instruments, as well as the clinical experience necessary to the making of a satisfactory diagnosis, has urged forward the search for a serum reaction which would be available for the diagnosis of all forms of malignancy.

Serum Diagnosis.—The search for a serum reaction for the diagnosis of cancer has been under way for some years, and many workers have devoted themselves to the problem. None of them have been rewarded with any practical success, despite the variety of the tests proposed. Dr. Carminati, working in Dr. Fichera's institute in Milano; Dr. Auler, at Blumenthal's clinic, and Dr. Fry, working under Leitch at the Cancer Hospital, are among the workers still engaged in this undertaking. Dr. Carminati has attempted to develop a diagnostic test for cancer by the action of Sudan III upon the white blood cells of cancer patients, with negative results. Dr. Fry has developed a test on the basis of a flocculation reaction when dried extract of cancer tissue (breast cancer) plus cholesterol is brought into contact with the patient's serum. In his method there is still a double source of error of false negatives or false positives in thirty per cent of the cases. Dr. Auler's experiments employ factors similar to the Wassermann reaction and have not yet been published.

Some of the best-informed biochemists in the realm of cancer investigation (such as Dodds and Bierich), conversant with these reactions and similar tests, such as those proposed by Hirsch and Albderhalden, are extremely skeptical of their possibilities. Should it be proved that cancer begins as a local tissue change, then the probabilities of developing a reliable test on the basis of byproducts cast into the general circulation become extremely small, when the disease is in its earliest stages. However, should the contention of some investigators (that cancer begins as a general systemic disease) prove correct, this method of diagnosis should have definite possibilities.

Radiology.—At present, no new method applicable to the field of x-ray diagnosis is being widely advocated, and the special techniques of ventriculography, lipiodol injections, and the Graham gallbladder dye, while being more widely used in the

various clinics, have not been added to or replaced by any method of special significance for the diagnosis of cancer. Nothing more has been heard of the x-ray technique of Kotsareff and Weyl, of Geneva, for cancer diagnosis, mentioned in E. F. Smith's report on cancer research in *Science* (Vol. LXI, June 12, 1925, pp. 1595–1601). This method, which utilized the injection of radiocolloidal substances with a selective fixation in cancer cells that could be registered on a sensitive photographic plate, has apparently been abandoned.

Biopsy in Surgery.—One of the most valuable aids to the diagnosis of early cancer developed in recent years has been the frozen section technique in pathology which has made biopsy and tissue diagnosis in the operating room a practical procedure. The work of Bloodgood, McCarthy and Terry in America has done much to popularize this method, but, unfortunately, in Europe (where the traditions of the older gross pathology are more firmly entrenched) the method, although well known, is not frequently utilized. Nevertheless, there are indications that newer methods for increasing the accuracy of tissue diagnosis at biopsy will have a direct influence in spreading this technique more widely among surgical clinics.

One of these newer developments in tissue diagnosis is the attempt to devise a differential stain for cancer by the use of some dye which would have a specific affinity for malignant tissue. This line of investigation is closely allied to the quest for a similar vital dye which could be utilized as a chemotherapeutic agent.

Burroughs, working under Leitch at the Cancer Hospital research laboratories in London, in his experiments on vital staining of cancer cells, has called attention to isamine blue and Congo red as differential staining agents, but these dyes are not well fixed by the living tumor cells, and their staining reactions with cancer have not been proved specific. Ludford, working with Murray in London on vital staining, has not found trypan blue to be a suitable dye in this regard.

The most outstanding results in this field have been reported by Lipschütz in Vienna. Using the wet Giemsa stain in a study of the cytology of fixed cancer tissue, this worker has called attention to a granular body near the cell nucleus which he believes is specific for the malignant cell. This granular body, which Lipschütz has termed the "plastin reaction," is demonstrable only in the most carefully prepared fixed tissues, and varies in its morphology and staining reactions. It may appear next to the nucleus or surround the cell achroplasm as a perinuclear hood, and its staining reaction may be strongly basophilic or achromatic (chromophobic) with the Giemsa dye. Lipschütz has demonstrated this "plastin reaction" in rat and mouse sarcoma, in Rous chicken sarcoma, and in several forms of human malignancy. While believing this reaction specific for cancer, he has not yet extended his investigations to a sufficient variety of tissues to confirm this contention.

Dr. Hans Hirschfeld, in Blumenthal's clinic, is contemplating an attempt to confirm the findings of Lipschütz. Should such a morphologic finding prove specific for cancer, its value would not only be in diagnostic work but would also lend an impetus to the search for a specific cell physiology in malignancy.

A new method of cancer diagnosis applicable to biopsy, based on biochemical methods, is now being tried at the Middlesex Hospital by Dickens and Dodds in the Courtauld Institute of Biochemistry. Using the findings and technique of Warburg, the glycolysis of specimens from the operating room is being measured in physiologic solution, and these measurements compared with the microscopic findings. The results have not yet been published, but Dr. Dodds is hopeful that both the presence of cancer and the degree of the malignancy will be demonstrable by such a technique. The present dispute concerning the specificity of the Warburg findings for cancer has a direct bearing on the results obtained by this method of diagnosis.

III. WORK ON THE TREATMENT OF CANCER

The cancer patient who is beyond the help of surgery has still little hope for cure by the newer methods of treatment. The best-informed clinicians and pathologists over the world are agreed that a definite cancer cure can not be pronounced until the patient has remained well over a period of five years after the cure has been effected. They are also agreed that a new mode of cancer therapy which is to surpass the present shortcomings must be effective against operative recurrences and generalized metastases. From the standpoint of these considerations most of the alleged cancer cures now in the process of development or enjoying some vogue of application have either been prematurely announced or are still in their experimental stages.

Radium.—The outstanding exception to such a criticism is the work done with radium at the Pasteur Institute in Paris by C. Regaud and his co-workers

and now being successfully repeated in such clinics as Fichera's in Milano, Blumenthal's in Berlin, Forsell's in Stockholm, Piney in the London Cancer Hospital, and in other places in Europe and America. The work of Regaud affords a standard for all those conscientiously endeavoring to establish a new mode of cancer therapy. Since 1919 practically every case treated in his clinic has been carefully followed to ascertain the results attained, and any cures established have been reported in terms of five- and ten-year periods. In addition, every possible case is biopsied to substantiate the diagnosis made, and any questionable records are discarded.

Proceeding by such careful methods, these workers feel that they have reached the limits of the therapeutic application of radium, and that further successes in this direction must await some biochemical discovery for sensitizing tumors now refractory to radium. They have found that, as a primary form of therapy, radium is successful only for cancer of epidermal origin. In other lesions its use is purely palliative. In cancer of the skin about the face and cancer about the female genitalia, radium has a definite field of usefulness as a primary procedure, and has certain advantages over surgery. Such a use of radium, however, is by no means novel, and only refines and confirms a definite mode of therapy which is rapidly becoming standard throughout the world. The newer successes with radium have been in the oral cavity, particularly with the tongue. In Regaud's clinic the following procedure for cancer of the tongue has been worked out:

1. Small and questionable cancers are removed by surgery alone.

2. Cancer of the anterior two-thirds of the tongue, if unilateral, is treated by radium to the tongue and surgery to the neck glands if indicated.

3. Cancer of the posterior two-thirds of the tongue is treated by radium alone to the tongue and to the glands of the neck. Cancer of the antrum is treated by a combination of radium and surgery. Regaud and his co-workers have found radium of palliative use only in cancer of the bladder, the rectum, the prostate, and the stomach. They believe that cancer of the breast is best treated by operation, and advise deep x-ray therapy where surgery is unsuccessful.

For applying radium to superficial tumors the radium needles or radium tubes are held in a mold of beeswax and sawdust, which forms a very convenient retainer and also a secondary filter. For the palliative use of radium for carcinoma of the internal organs, the radium bomb, in a suitable lead shield, is applied.

Although the careful methods of Regaud have shown radium therapy to have a limited and definite sphere of usefulness, there is a rejuvenated interest in this mode of treatment, throughout Europe, which is overflowing the boundaries established at the Pasteur Institute and leading to a more indiscriminate and widespread application of this precious element in cancer.

Colloidal Lead.—Approximately five years ago intravenous colloidal lead compounds were looked to as a possible new and more hopeful cancer cure. Aside from surgery, x-rays, and radium, this is the only mode of cancer therapy which has enjoyed an extensive clinical trial in the large medical centers in recent years. In most of the European clinics where the method has been tried it has been abandoned; but Bell in Liverpool, its originator, and Todd at Bristol are still earnestly endeavoring to work out this mode of treatment successfully on patients with hopeless cases of malignancy. These workers seem definitely encouraged by the results they are getting, and believe that, by employing lead sellinate, they have improved the method. Many of the patients are being treated in the out-patient department with weekly injections of this lead preparation in a manner resembling the treatment of luetics with salvarsan. It is too early to comment on these modified lead treatments, as a thorough trial of the method requires clinical follow-ups extending over a period of years. However, to date, biochemists have been unable to confirm any specific fixation by the cancer cells of the lead compounds used, and a scientific basis for this mode of cancer therapy is therefore still lacking.

Vital Dyes.—An experimental attempt to find a chemotherapeutic agent for cancer in the form of some vital dye has been tried without success in various laboratories. In 1928 W. Munck in Copenhagen claimed to have produced a retarding influence on transplanted carcinomas in mice by the injection of trypan blue; but R. J. Ludford, working with Murray in the laboratories of the Imperial Cancer Research Fund, could not repeat his results.

Bernhardt and Strauch reported similar results obtained with isamin blue, and treated fifty human cases of cancer intravenously with this dye, supposedly with some beneficial results. Dr. Fichera in Milano, however, has observed no benefit in patients treated by this dye or with trypan blue in his clinic. Experimental work along these lines

being continued by Burroughs and Ludford in London.

The attempt to utilize vital dyes in the treatment of cancer has revealed the fact that the growing tumor cells are practically impervious to these dyes as long as the cell membrane is intact. Over 145 various dyes have been tried by different investigators without any promising results to date.

Immunity to Cancer.—Among some of the workers in experimental cancer it is held that cure for cancer to surpass surgery and be effective in the later stages of the disease, when dissemination has occurred, must confer on the patient some immunity to the cancer cell. Thomas Lumsden, at the Lister Institute in London, is one of those who entertain such views and who are endeavoring to find a method for immunization against cancer. From his experiments Lumsden concludes that animals immunized against cancer transplants from another animal have more than an immunity to the transplanted cells, and have, in addition, an antimalignant factor in their blood. His conclusions are based on the finding that the serum of the immunized animal will injure cultures of the tumor cells used for transplant, and also malignant cells from the other tumors, but will not injure the cell cultures of normal tissues from the animal which bore the original tumor used for transplantation. Lumsden is endeavoring to develop a method of actively immunizing laboratory animals against transplanted tumors, and believes that he has succeeded in doing this by gradual doses of formalin into the transplanted tumor. If a rat bearing two such tumors, one on either flank, is treated by such formalin injections into one tumor, both tumors will disappear when the injected tumor has been sufficiently injured. Lumsden is now anxious to extend his experiments to spontaneous tumors in mice, but he is awaiting desirable material at present.

Influencing Tumor Metabolism.—In a newer field of investigation other workers are attempting to effect a cancer cure by influencing the metabolism of the malignant cell. Warburg has conducted a group of experiments on mice with the aim of starving out the tumor cells by interference with their sugar and oxygen supply. In an attempt to interrupt the breathing of the cancer cells, the animals were made to breathe an atmosphere containing only five per cent of oxygen over a period of several hours. Apparently because of the overcrowding of cells in them and through injury to the cells of the capillary walls, the tumors were less resistant to oxygen want than the normal tissues, and biopsy conducted on the anesthetized animals showed that practically all of the malignant cells were dead or had ceased to function. Attempts to interfere with the sugar supply of the tumors by maintaining the animals in insuling shock did not appear to influence the survival of the tumors.

These exepriments of Warburg are of special interest at present, because quite recently Sokoloff, at the International Congress of Physiologists in Boston, reported experiments in which the tumor cells were injured by an opposite metabolic effect, too rapid breathing, induced by the injection of a compound containing an extract of the cortex of adrenal glands.

It is impossible to predict at this time what consequence these metabolic experiments will have on the future treatment of cancer in human beings.

SUMMARY

A review of the work now in progress in European cancer laboratories has been given, based upon a recent tour of investigation in Europe. Progress in search for the cause of cancer recently has largely been through the development of new experimental methods. The experimentation with carcinogenic agents is the oldest of the experimental methods and is still being investigated by Dr. Ernest L. Kennaway at the Cancer Hospital Research Institute in London. No new findings have been reported. The method of tumor filtrates has been widely tried, due to the work of Murphy at the Rockefeller Institute, who claimed to have produced Rous sarcoma by an extract of normal testicle, and by Luther Heidenhain in Worms, Germany, who also claims to have obtained carcinoma in rats from a filtrate of human chondrosarcoma. The experiments of neither one of these investigators have been confirmed. The work of Warburg on the metabolism of tumor cells has introduced a new experimental method in the study of the etiology of cancer. Warburg's findings in regard to the unique magnitude of the glycolysis of malignant tissue is a subject of much controversy. Bierich in Hamburg and Crabtree in London both believe that such metabolism is not specific for cancer tissue. No experimental support has been given the theory that cancer begins as a general systemic disease.

No new form of cancer diagnosis applicable to all forms of malignancy has been added in recent years. At present, many workers, such as Fry in London, Carminati in Milano, and Auler in Berlin, are attempting to devise some means of serum diag-

nosis in cancer, but no reliable results of practical importance have been achieved. No radiologic technique specifically adapted to cancer diagnosis has been added. Biopsy and the use of the frozen section for tumor diagnosis is not as widespread in Europe as in America. In a few laboratories—namely, at the Cancer Hospital in London and at the Johns Hopkins Hospital in America—there is a search for a differential cancer stain which will make frozen-section diagnosis more accurate and useful. Dr. Lipschütz in Vienna believes he has demonstrated a specific morphology in the cancer cell by a new method of staining fixed tissue with the Gimsa dye. With this stain he finds a semicircle of basophilic granules outside the nucleus of the tumor cell, which he terms the "plastin reaction." His results, however, are not applicable to frozen sections or practical diagnosis, and have not been extensively tried.

The search for a cancer cure is becoming more and more widespread. Radium treatment has had a distinct rise in popularity, both in Europe and America; but in Regaud's clinic in Paris, where the results have been most carefully checked, this mode of treatment has been found useful only in cancer of epidermal origin, and has a close competitor in surgery. Treatment of cancer by intravenous injections of colloidal lead has been abandoned practically everywhere. Blair Bell at Liverpool and Todd at Bristol are continuing the quest for a vital dye to serve as a chemotherapeutic agent. No success has been reported, although trypan blue and isamine blue have both been advocated in Danish and German clinics. The attempt to immunize against cancer is being tried by Lumsden in England and by others in Germany. It is still in the experimental stage. Newer metabolic findings in regard to the respiration of tumor cells have been applied in experimental treatment of cancer. Warburg of Berlin has tried to suffocate the tumor by an atmosphere deficient in oxygen, and Sokoloff of Prague has tried to exhaust it with overbreathing. Both methods have been confined to local growths in mice.

LIST OF CANCER INTERVIEWS

Dr. Pedotti—Stadt Hospital, Lugano; Suisse surgeon; pupil of De Quervain.

Dr. Gaitano Fichera—Director general of Instituto Nazionàle Vittoria Emanuele III, per lo Studio e la Cura del Cancre, Milano, Italy; editor of *Tumori*; surgeon and pathologist.

Dr. Petro Rondoni—Professor of experimental biology, Instituto Nationàle Vittorio Emanuele III, Milano, Italy; biologist.

Dr. Carminati — Instituto Nationàle Vittorio Emanuele III, Milano, Italy; research worker, under Dr. Petro Rondoni.

Dr. Haslinger—Clinic of Dr. Hajek, Allegemeine Krankenhaus, Alserstrasse, Wein, Austria; laryngologist.

Dr. Grossman—Clinic of Dr. Hajek, Allgemeine Krankenhaus, Alserstrasse, Wein, Austria; laryngologist and pathologist.

Dr. Karl Sternberg—Wiedener Krankenhaus, Favoriten Strasse, Wein, Austria; pathologist.

Dr. B. Lipschütz—Franz Joseph Spital, Kundratstrasse, Wein, Austria; cytologist.

Dr. Jacob Erdheim—Krankenhaus, Stadt Wein, Austria; general pathologist.

Dr. Ferdinand Blumenthal—Universitats Instituts für Krebsforschung, Luisenplatz No. 6, Berlin, Germany; internist; editor of *Krebsforschung*.

Dr. Hans Auler — Universitats Instituts für Krebsforschung, Luisenplatz No. 6, Berlin, Germany; serologist.

Dr. Hans Hirschfeld—Universitats Instituts für Krebsforschung, Luisenplatz No. 6, Berlin, Germany; pathologist.

Dr. (Miss) Klee-Rawidowicz—Universitats Instituts für Krebsforschung, Luisenplatz No. 6, Berlin, Germany; cell culture.

Dr. Max Borst—Pathologisches Institut der Universität München, Nussbaum Strasse No. 26, München, Germany; pathologist.

Dr. Archibald Leitch—Cancer Hospital Research Institute, Fulham Road, London, England; chemical biologist.

Mr. Harold Burroughs—Cancer Hospital Research Institute, Fulham Road, London, England; experimenter on vital dyes.

Dr. A. Piney—Cancer Hospital Research Institute, Fulham Road, London, England; radiologist.

Dr. H. J. B. Fry—Cancer Hospital Research Institute, Fulham Road, London, England; pathologist.

Dr. (Prof.) Dodds—Courtauld Institute for Biochemistry, Middlesex Hospital, Cleveland Street, London, England; biochemist.

Mr. Dickens—Courtauld Institute for Biochemistry, Middlesex Hospital, Cleveland Street, London, England; experimenter with Warburg apparatus.

Dr. James A. Murray—Director of Imperial Cancer Research Fund, No. 8 Queens Square, London, England; research director.

Dr. R. J. Ludford—Imperial Cancer Research Fund, No. 8 Queens Square, London, England; experimenter with vital dyes.

Mr. George Maxwell Richardson—Special stu-

dent, University College, Gower Street, London, England; working with Dr. Keith Cannon; biochemistry.

Dr. Balfour—Director, London School of Hygiene and Tropical Medicine, Gower Street, London, England; not working on cancer.

Mr. Thomas Lumsden—Lister Institute, London, England; immunologist in cancer.

Mr. Walter Spencer—No. 43 Harley House, London, England; consulting surgeon, Westminster Hospital.

Dr. Robert Bierich—Krebsforschung Institut, Eppendorf Krankenhaus, Mamburg, Germany; biochemist and cancer research.

Dr. Otto Warburg—Kaiser Wilhelm Instituts für Biologie, Berlin, Germany; biochemist.

Dr. C. Regaud—Pasteur Institute for Radium, 26 Rue d'Ulm, Paris, France; radiologist.

Dr. Lacassagne—Pasteur Institute for Radium, 26 Rue d'Ulm, Paris, France; radiologist.

Dr. J. W. Nankirell, Middlesex Hospital, Cleveland Street, London, England; radiologist.

TRANSVESICAL REPAIR OF VESICO-VAGINAL FISTULÆ *

(WITH REPORT OF A CASE)

By G. G. IRWIN, M.D.
Charleston, W. Va.

Vesico-vaginal fistulæ are relatively infrequent, but nevertheless occur so often that a consideration of the surgical principles as well as the less known suprapubic transvesical operation is not untimely. As described by Farman and Thompson,[1] certain essential factors must be observed, *viz.*:

1. Preparation of the patient.
2. Exposure of the operative field.
3. Excision of the scar tissue and fistulous tract.
4. Mobilization of the bladder.
5. Closure of the fistula.
6. Bladder drainage during healing.
7. Post-operative care.

Of course, most cases of vesico-vaginal fistulæ are best taken care of by the vaginal approach as described by Marion Sims. That this method is not altogether adequate is indicated by the various modifications sponsored by Ward, Kelly, and others, all of which have the purpose of facilitating approach to the operative field. On the other hand, Kelly,[2] Young,[3] Trendelenburg,[4] and Legueu,[5] to mention a few, have at times found it expedient to approach the fistula either through the peritoneal or bladder cavities. In the case cited below, the reason for the transvesical approach was that the patient had had a complete hysterectomy and the fistula was small and high up in the vaginal vault, close to the adherent scar resulting from the removal of the cervix. The transvesical approach gave a more accessible operative field.

Preparatory treatment is directed to the removal of infection in the bladder and vagina, and perhaps more essentially to the eradication of the upper urinary tract infections. Most of the cases of vesico-vaginal fistulæ have very well-drained bladders which are consequently free of infection unless a pus-laden urine is coming from the kidney. These cases, therefore, should be cystoscoped before operation. Cystoscopic examination also gives us the invaluable information as to the relation of the fistula to the ureter orifices.

Various modifications of the Sims operation give proper exposure for the vast majority of vesico-vaginal fistulæ cases. As in the case cited, it may be found that the fistula is high in the vagina, surrounded by scar tissue, or for other reasons is unsuitable for vaginal approach. In such cases, the technique followed in my case is satisfactory. Legueu[5] sometimes approaches these cases through the peritoneal cavity.

Whatever the surgical approach, operation first calls for removal of the fistula and the surrounding scar tissue, so that there can be effected a separation of the bladder muscle from the vaginal mucosa. This is a most essential part of the operation. The resulting hole may be disconcertingl ylarge, as compared with the original size of the fistula; but, with adequate mobilization of the bladder, the bladder muscles can usually be coapted and both vesical and vaginal mucosæ closed.

The aim of the closure is the accurate approximation of the wound in three layers. A water-tight union has been thought to be essential. Certainly it is a very desirable aim; but in one case, in which I obtained a very good result, there was leakage for a day or so after the operation. I am inclined to believe that taking advantage of the suggestion of Chute—keeping the patient on her abdomen and side—permitted a slight hiatus to granulate and close.

Most fistulæ occur through the trigone of the bladder, which is the fixed portion of the bladder. Nevertheless, the practice of draining through indwelling catheters, and suprapubic tubes in the course of the suprapubic operation, is commonly practiced. This serves the purpose of avoiding dis-

* Read before the Kanawha Medical Society at Charleston, West Virginia, on May 6, 1930.

tention of the bladder and undue pressure on the suture line, particularly during coughing and straining. Urethral catheters should be removed and cleaned about the fourth day, and reinserted for four or five days more.

Careful post-operative care is essential in securing good results. Chute has advanced the suggestion that, if an indwelling catheter were used and the patient put on her side or abdomen in such a way as to keep the urine from the fistula, many of these cases would heal without operation. This plan is very advantageous in the post-operative care, but it calls for no little work o nthe part of the nurse.

CASE.—Charleston General Hospital, No. 22664, Mrs. N. D., white, age 52, housewife, admitted May 1, 1929; operated upon May 4, 1929; discharged May 31, 1929. Complaint: Inability to hold urine, which leaks through the vagina; nervousness and melancholia.

History of present illness: Patient underwent a complete hysterectomy about two years ago. Supposedly, this was done for carcinoma of the body of the uterus. The day following the operation, leakage of the urine per vaginam was noted and has persisted up to the time of admission to hospital. An attempt to suture a rent in the bladder was made at the time of operation. As a result of the loss of urine, with its attendant odor and discomfort, the patient has gradually developed a depressive psychosis.

Past illnesses: There is nothing of significance in the patient's past history, apart from the hysterectomy. Since the operation she has had some treatment with glandular products for the alleviation of symptoms of artificial menopause. Two children, living and well; no miscarriages.

Family history is negative as to cancer, tuberculosis, and insanity.

Physical examination: Patient is a middle-aged white woman, slender, good color, of introverted type. Teeth are false; tonsils atrophied; thyroid and neck normal. Heart: Apex beat in fourth interspace, no enlargement, no murmurs; tones distant; rate regular, 74. Lungs: Breath sounds normal; few transient râles in lower left lobe; tactile and whisper fremitus normal; expansion equal, right and left. Kidneys, liver and spleen not palpable or tender. No abdominal masses or tender spots. Midline scar from umbilicus to pubis, solid. Vaginal examination (palpation), negative. Speculum examination shows mucosa in good condition; cervix absent. To the right of the depression marking former location of the cervix, there was noted a small, fistulous opening through which urine leaked on upward pressure. No ulceration or inflammation was noted about the fistula.

Cystoscopy: Bladder capacity small. Mucosa pale, not inflamed; no edema. Fistulous opening, midline, one-half inch in diameter, about three-fourths inch above trigone. Red cell count normal, hemoglobin 85%, sedimentation time 182 minutes. White count, 5,000 leucocytes, 28% polymorphonuclears, 38% small and 4% large lymphocytes. Urine negative as to sugar, albumin, and casts; there were a few pus cells and a very occasional red blood cell. Wassermann negative.

Pre-operative diagnosis: Post-operative vesico-vaginal fiustla. Indications for operation: Absence of signs of malignancy; presence of fistula and its presumptive effect on her mental life.

Operation: Transvesical repair of vesico-vaginal fistula. Spinal anesthesia, 350 mgm. spinocain. Transverse suprapubic incision, cutting across scar of previous operation. Muscles were split vertically, to the right of scar. There was much adhesion of tissues, and this, together with the fact that the bladder could not be distended, resulted in the accidental opening of the peritoneum. This hole was closed with plain catgut. The bladder was opened vertically four inches, well down behind the symphysis. This gave a satisfactory exposure of the fistula. With an assistant pushing upward from the vagina, the entire fistula and surrounding tissues were excised. The wound at this time was about three times the size of the original fistula. The mucosa of the vaginal wall and that of the bladder were found to separate easily from the bladder muscle. Vaginal mucosa was closed from above with No. 1 chromic running suture. Bladder muscle coapted with interrupted No. 2 chromic sutures. Bladder mucosa closed with running No. 0 plain. The anterior bladder wound was closed about a No. 24 Pezzar catheter with two layers of No. 1 chromic sutures. Penrose drain to prepubic space. Muscle and fascia closed with double No. 1 chromic catgut. Skin closed with clips. A No. 20 Pezzar catheter was insterted into the bladder through the urethra.

Pathologic findings: Grossly, the few removed tags gave the impression of containing some scar tissue. No microscopic examination.

Final diagnosis: Vesico-vaginal fistula.

Progress notes: Bedside drainage from both catheters. Patient kept off her back, lying mostly

on side. Prepubic drain removed on the fourth day. On the tenth day the urethral catheter slipped out and was replaced. A slight infection about the suprapubic wound caused no trouble and subsided after removal of the catheter. Suprapubic catheter removed fourteenth day. Urethral catheter removed eighteenth day; voided on the eighteenth day. Patient out of bed on the nineteenth day. No leakage. She was pretty weak and was kept about the hospital for the next twelve days, both to gain strength and to assure that there was no leakage.

Condition on discharge (May 31): Cured.

Follow-up: June 15, no leakage. Voids at frequent intervals, about four ounces at a voiding. Still depressed, but showing an increasing interest in home affairs. On July 1, the frequency was slightly less. Bladder capacity six ounces. Cystoscopy shows interior of bladder in satisfactory condition. No vaginal bulging.

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POST-DIPHTHERITIC PARALYSIS *

By FRANK S. HARKLEROAD, M.D.
Harvey, W. Va.

In combating diphtheria, physicians have to deal with one of the most insidious diseases that is prevalent today. This insidiousness exists because of the absence of marked symptoms of onset which, if present, would make an early diagnosis possible. It also exists because of the frequent similarity of the disease in its early stages to a simple attack of acute tonsillitis. Many patients are doomed before they are brought to the attention of the physician. Another factor which often lessens the patient's chance of recovery is belief that a positive throat culture must be obtained before the diagnosis can be made and antitoxin administered. What chance has a patient, especially a child, if there is a delay of a day or two before it is decided that the trouble is in the throat, and then, if there is a further procrastination of forty-eight hours or more before administering antitoxin, while awaiting the culture report? Very little, indeed!

Again and again the state department of health has advised the giving of antitoxin first in a suspicious case and making the diagnosis afterward. Only by this method will the present mortality of this disease be further lowered. Why is it that the sporadic cases and the first cases in an epidemic are most likely to be the fatal ones? Because these patients do not get the benefit of immediate specific treatment which others receive after the presence of the epidemic is fully realized.

Negative throat culture may mean nothing. Any throat presenting a membrane of any description may be diphtheritic, especially if areas other than the tonsils are involved. It is astonishing how many cases one may see which respond rapidly to antitoxin and yet give a negative throat culture. Some of these may be Vincent's angina or septic sore throat with a streptococcus membrane; but, strangely, in these the diphtheria antitoxin seems to have a beneficial effect.

The purpose of this article, in addition to sounding a warning note against procrastination in the treatment of diphtheria, is to present specific examples of one of the late and often most serious complications of this disease; namely, death from post-diphtheritic paralysis.

Paralysis is a frequent sequela or complication in diphtheria. It usually arises between the second and third week after the onset of diphtheria, at a time when one would think that recovery was assured. It is more frequent in adults than in children. A statistical study of a thousand cases of diphtheria at the Kingston Avenue Hospital, New York Department of Health, showed a hundred and fifteen cases of post-diphtheritic paralysis. In general, the various types of paralysis so commonly associated with diphtheria are estimated to occur in from ten to twenty-five per cent of all infections with the Kleb's-Loeffler bacillus.

The first and most common symptom of paralysis following diphtheria is its appearance in the palate with loss of pharyngeal reflexes. It is the earliest of all paralyses except cardiac. This is evidenced by loss of function, nasal twang to the voice, difficulty in swallowing, particularly in swallowing liquid food, which escapes through the nose. Frequently, deglutition is accompanied by short coughs; later, feeding may become a problem; mucus accumulates in the throat, aspiration pneumonia being one of the most dreaded complications in this condition. Paralysis of the larynx and vocal cords is another variety which offers a grave prognosis. Breathing becomes stertorous, dyspnea and stridor supervene. Paralysis of the muscles of respiration is usually seen

* Read before the Fayette County Medical Society at Fayetteville, West Virginia, April, 1929.

in the generalized form. Paralysis of the diaphragm occasionally occurs, and is due to degeneration of the phrenic nerves. It may be unilateral or bilateral, and in the latter variety the prognosis is grave.

Diagnosis.—The diagnosis of post-diphtheritic paralysis is, as a rule, not difficult for those familiar with this complication in diphtheria. There are, however, three conditions with which it has frequently been confounded. One of them is poliomyelitis, from which it is differentiated by the history of having had a severe attack of diphtheria or a sore throat shortly before the onset of the paralysis. Post-diphtheritic paralysis is of gradual onset, while in poliomyelitis the onset is sudden. The nasal twang to the voice, with diminished palatine reflexes, is present in post-diphtheritic paralysis and absent in poliomyelitis; by the absence of complete paralysis and by the absence of trophic changes in post-diphtheritic paralysis which are present in poliomyelitis; cranial nerve involvement presence in post-diphtheritic paralysis, absence in poliomyelitis, and finally by the spinal-fluid findings.

Juvenile tabes dorsalis is differentiated from the pseudo-tabetic type of post-diphtheritic paralysis by the acute onset, absence of pain, absence of Argyll-Robertson pupils, absence of bladder and rectal disturbances, absence of sensory disturbance, absence of primary optic atrophy, by negative Wassermann reaction, and by spinal-fluid findings.

Occasionally, post-diphtheritic paralysis is erroneously diagnosed as laryngeal diphtheria. In the latter condition, however, deglutition is not impaired, the onset is sudden, elevation of temperature is invariably present; the patient is croupy, has a brassy voice; the pharyngeal reflexes are present; the throat is congested and an exudate is frequently seen on the tonsils; infra- and supra-sternal retraction is present.

Treatment.—The treatment of post-diphtheritic paralysis consists mainly of absolute prolonged rest in bed; strychnin sulphate in large doses (gr. 1/15 hypodermatically three or four times a day); cardiac stimulants as circumstances require; feeding by gavage when the muscles of deglutition become paralyzed.

Summary.—1. Paralysis is a common sequela in diphtheria, occuring in from ten to twenty-five per cent of all diphtheria patients.

2. It occurs more frequently in septic cases of diphtheria.

3. Paralysis frequently ocurs in unrecognized cases of diphtheria.

4. The prognosis in these cases is less favorable than in recognized and treated cases.

5. Paralysis rarely follows laryngeal diphtheria.

6. Early diagnosis of diphtheria and early administration of sufficient diphtheria antitoxin is the only preventive of paralysis.

7. The mainstay in the treatment of post-diphtheritic paralysis is its anticipation by absolute rest in bed and large doses of strychnin sulphate.

8. Any throat membrane may be diphtheritic.

9. Give antitoxin first and then await the result of the throat culture. A negative report may mean nothing.

10. Immunize all contacts at once.

If these facts are carried in mind and acted upon, it will be possible to reduce still further the morbidity and mortality of this treacherous disease.

THE OLD ORDER CHANGETH *

By ALBERT H. HOGE, M.D., F.A.C.P.
Bluefield, W. Va.

"Well, Doctor, I am *so* glad to see you! Pauline is very sick and I am afraid she has pneumonia. It has been twelve years since you pulled her through when she had double pneumonia, and then she was only six years old. We all thought she would never get well—that is, every one including the other two doctors—but you kept saying that your treatment would cure her. I remember some of the neighbors kept saying we should have an older, more experienced doctor to take the case, but you seemed to be so sure of your treatment that we just would not change, and we are glad we didn't."

Now, picture a lapse of twelve years. The same home, the same patient, and the same physician—but one who is older and more experienced. During this time he has worked very hard, studied a great deal at home, and has visited many of the larger clinics. He finds the patient has pneumonia.

"Of course, Doctor, you will use the serum as you did before?"

"No; we have found that it does very little, if any, good now. Yes, I know how I felt before and the success I had in all the cases; but in some of the large medical centers, where a number of control cases were used, a careful check-up showed that just as many died who used it as those who had practically no treatment. No, we won't move her to the sleeping porch as we did before. It has been found

* Read before the Mercer County Medical Society at Bluefield, West Virginia, on April 17, 1930.

in another medical center that more patients die in the open air than otherwise. Now, the rule calls for a warm room, fairly well ventilated. No, we won't allow her plenty of food, and, especially, don't give her the starches and sweets she took so well before. In another medical center it has been found that foods of any kind, especially starches and sweets, cause a great deal of gas to form in the stomach and intestines, seriously interfering with free breathing. We will allow only very small quantities of clear broth for the next few days. No, she can not stay at home under your care, as she did before. I will call a graduate nurse to attend her. You may visit her for a few moments each day."

This may sound absurd, but it is not so very ridiculous if you will only think for a while. It would seem that we do too much chasing the rainbow and not enough individual thinking. Our profession is divided into two general groups: the clinicians and the scientists; and both sides experience the greatest difficulty grazing in their own pasture. The clinician, reading of the experiments of the scientist, conducted largely upon animals or charity patients under his control in free wards (both can be handled about the same), is much amazed to find that the very remedy he has been using for many years, with very good results, has been pronounced as being of no value and is, instead, really quite a disadvantage in this disease. Disregarding all of his past experiences, this remedy is thrown into the discard. He is, therefore, wide open for the first new thing suggested for this disease. He will not, as a rule, have long to wait. Ere many days pass, there will begin to arrive in person and through the mails from various so-called ethical pharmaceutical houses the very remedy he is seeking.

What better illustration of this than the time-honored disease called rheumatism? Those of us who have been practicing for many years have seen all forms of evolution here; have watched it emerge from the uric acid viewpoint to one of focal infection. Many years ago we were shown that salicylates did no good in these cases, but that patients using them were more likely to have complications than otherwise. Since that time many of us have been groping in the dark for something better, without results.

For many years, great effort has been made to find the cause of this malady. Focal infections are known to play a part; but when one considers the thousands of normal tonsils removed and the millions of healthy, sound teeth sacrified upon the altar of focal infection, with only an occasional recovery, it is not any wonder that patients with sore and tender joints get tired and discouraged, and, when seeking relief, have the physician spend most of his time examining their heads. True, we should do all in our power to remove the cause; but should not the patients receive some consideration during this investigation? They do not consult us because of focal infection that may exist but is seldom found, but because of their pain and discomfort.

Permit me to suggest that, the next time you examine and adult suffering from rheumatism, you be not so orthodox in making the investigation. Try by beginning at the feet and searching slowly and diligently upward; you will be surprised to find, in many adults, more pus below the waistline than above it. It is not unusual to find patients who have lost their teeth and tonsils because of rheumatism, but who have never had a thorough physical examination or any other form of treatment. I think that most people believe that there is *some* medicine that will cure *any* disease, and will not be perfectly satisfied, although completely relieved by some other procedure.

It is not my intention or desire to reflect in any way upon the great scientific advances that have been made in medicine; but, in my humble way, to remind you that, in our desire and effort to keep up with the rapidly moving parade, we are losing contact with and the confidence of our patients. To substantiate this, one will grant that we are using far better methods in the treatment of diseases than did our predecessors; yet, who among you does not long for the esteem, affection, and very great confidence their patients had for them?

We hear a great deal about the passing of the family physician. He is being replaced by the modern diagnostician or internist. Frank O'Malley, in a recent article, gives us a very good definition of the difference between the old family physician and the modern internist: "The latter diagnoses everything and treats nothing, while the former treated everything and diagnosed nothing."

True, the old-timer was compelled to use much psychology because he had very few drugs at his command. Now, we have so many drugs we scarcely know which to use, and, in our confusion, we compromise by suggesting a change of diet, vacations, more sleep, and other things that we know will not be carried out. Psychology and drugs other than patent medicines play a small part in modern medicine.

Furthermore, people are buying far more patent and proprietary medicines than ever before in the history of the world. People have not lost their faith in drugs, but are losing it in physicians, because they are losing their confidence in and knowledge of the action of drugs.

Take the files of the average drug store: a careful check-up has shown that more than seventy per cent of the prescriptions there, all written by physicians, are for patent or proprietary drugs—and who can tell one from the other?

During the past decade we have passed through many economic changes in the business world. That commercialism has entered the field of medicine one need no longer deny. Large industrial corporations are trying many means of lowering the cost of caring for their employees when ill. Where these experiments will lead, one can not say.

Ours is the noblest and finest profession that mankind has ever known. I do not believe that industry, as practiced today or in the future, will ever be able to drag us into the mire with it. There will always be room on top for the physician who will assume the responsibility for his patient; this can not be passed to another. He must at all times have confidence in the measure he is using to treat the patient, as well as confidence in the laboratory that he uses. He must make use of an increasing number of special methods of study which often have to be pursued by colleagues; but in making use of this he should do so intelligently, often by consulting with his colleagues. Only in such manner can he obtain the assistance he desires.

Coöperation in the mere sense of division of responsibility is not coöperation. He will practice better medicine who coöperates with his colleagues in the sense of uniting with a number of other practitioners who agree to support certain clinical and other laboratories so necessary in supplying them with serological and bacteriological assistance. Only in such a manner will he obtain the full assistance he desires.

He will practice better medicine who takes the full responsibility in choosing his own consultants and determines them by their particular ability in certain phases of medicine; who remembers that the practice of medicine is an affair between two human beings in which the human element is all important and can not be avoided; that the practice of medicine is a profession, and that he who seeks to make it a business or trade has mistaken his calling.

TUBERCULOSIS ABSTRACTS

Tuberculin Skin Reactions

Early European statistics, based largely on studies of groups suspected of having tuberculosis and living in populous cities, created the impression that all adults and nearly all children reacted positively to the tuberculin test. For that reason, the value of the test was unjustly discounted. Infection is not so prevalent in this country, especially among children, and since the tuberculin reaction is a very simple measure and furnishes a base line in the diagnosis of early tuberculosis, its value is being reëstablished. Charles Hendee Smith, from whose paper, "Tuberculin Skin Reactions" (*Am. Jour. of Dis. of Children*, Dec., 1929) the following abstracts are derived, pleads for a more consistent use of the test and at the same time emphasizes the need for greater precision in making and interpreting the test.

Tuberculin Skin Reactions.—Tissues which have once been sensitized by living tubercle bacilli develop the power to react to tuberculin. A positive tuberculin reaction means that the tubercle bacillus has lived and grown in the body. Koch introduced the general or subcutaneous tuberculin reaction in 1890. In 1907, Pirquet developed the cutaneous scratch test, and the same year Wolff-Eisner and Calmette described the conjunctival test, while Moro gave us the percutaneous or inunction test. About a year later, Mantoux introduced the intracutaneous test, and shortly after that Hamburger and Monti used the hypodermic or "Stich" method. The object of each of these tests is to bring tuberculin into contact with the deeper epidermal cells, and, therefore, the intracutaneous and "Stich" tests may be expected to be more accurate than the Pirquet and Moro tests.

Pirquet Test Unreliable.—Because of the simplicity of the technique, the Pirquet test has gained popularity and has been used in many countries as a routine procedure. But it has distinct disadvantages. If the scratch is too deep, the subsequent swelling may, to an untrained observer, resemble a positive reaction. A greater disadvantage is the uncertainty of the test because the tuberculin may not be kept in contact with the cells of the deeper layer of the skin long enough to excite the specific response. Many children fail to react on the first test, yet show a positive reaction when retested a few days later. This is not due to the raising of the sensitivity by the first test, for if two tests are made at the same time one may fail while the other reacts sharply.

The unreliability of the Pirquet test, says Smith, became manifest to those in the Children's Medical Division at Bellevue Hospital about ten years ago. The Mantoux reaction was adopted in the hope of finding a more accurate test. Immediately, it was found that many patients reacted definitely to the Mantoux test and failed to react to the Pirquet, although two of the latter tests were always done. This difference persisted year after year and at about the same rate; *i.e.*, the Mantoux test giving about twice as many positive reactions as the Pirquet. For several years, both tests were performed on all children, but the Pirquet was finally dropped as a waste of time because of its uncertainty.

Careful Technique Essential.—After trying various dilutions, Smith found that 1:1,000 is the most satisfactory, stronger solutions (1:200, 1:100, or 1:10) being used if necessary to retest, though these stronger solutions should never be used for the first test, as sloughing may result. Making up and keeping the solution is not difficult, but the usual precautions must be strictly observed and errors of technique must be guarded against. For example, a needle or syringe that has been used for tuberculin should never be used for the control nor for a Schick test, as tuberculin may remain active after boiling several hours and cause a reaction. Acute illness, especially if there is a high fever, may suppress the reaction. Severe tuberculosis, such as general miliary tuberculosis or a wasting, chronic disease, may obscure the reaction. The tuberculin must not be too old nor contaminated with bacteria or molds.

Pirquet and Mantoux Tests Compared.—As a means of comparing the reliability of the Pirquet with the Mantoux test, 3,112 children (ranging in age from birth to thirteen years) were given two Pirquet tests at the same time that the Mantoux was given. Seven and eight-tenths per cent reacted positively to the Pirquet test, while 16.5% responded to the Mantoux. This confirms the opinion of others that the Pirquet test is unreliable and that epidemiological studies based on the Pirquet test are, for that reason, open to criticism. Smith has gathered and compared graphically the tuberculin test results of various groups of children in American and European cities. All of these inscribe so characteristic a curve or slope that it is quite possible to calculate the incidence of positive reactors at given ages in a given place. It is interesting that the curves for Vienna and Graz are distinctly higher than for other European cities, and that all the curves of American cities are of about the same incidence. Not more than forty to fifty per cent in the large American cities harbor the bacillus at puberty.

It must be remembered, concludes Smith, that "the army of the tuberculous is recruited from those infected in childhood," and "phthisis is the last verse of a song the first of which was sung in the cradle." These infected children, then, who carry tubercle bacilli in their bronchial nodes or elsewhere, are the ones who need early, correct diagnosis. The Mantoux test provides the means of making it. It should be used on every child who is underweight, anemic or languid, or who has an unexplained irregular fever. These children with "tuberculous infection," so called, have true incipient tuberculosis, latent or active. This disease is generally in lymphatic tissue, where it is easily encapsulated and where scar tissue does no great harm. Under intelligent, watchful care they usually do well. When the disease has involved more important structures, such as the lungs, bones or meninges, the damage is greater, the cure is more difficult or impossible, and the diagnosis has been made too late.

Working for Children

Never in the history of the world have children been cared for with such tender consideration as in the present era. To many of us it may not occur that children have not always been so happy or so healthy as they are now. In a recent issue of *Hygeia* Dr. John A. Foote traces the story of the child health movement and the physician's part in it.

Children died from smallpox by the thousands until Jenner discovered vaccination. Pasteur was not a physician, but the process of killing germs in milk which bears his name has saved incalculable numbers of children. Robert Koch's discovery of the germ of tuberculosis has made it possible to lower the death rate from 200 to 50 per 100,000 in twenty-six years.

Roux, Von Behring, Schick, Park, and Zingher are illustrious names that stand for the eradication of diphtheria. The work of the Dicks in scarlet fever, of Huldschinsky and Hess in the prevention of rickets by sunlight and cod liver oil, of Holt and Howland and Marriott in infant feeding—these are only a few of the great number that have contributed to the present safety and welfare of children. Every city and county health department has its unknown heroes who are doing their share of this vast work of saving children.

THE WEST VIRGINIA MEDICAL JOURNAL

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PRESIDENT'S PAGE

IT HAS often been said that doctors are notoriously poor business men, and, taking the profession by and large, there is considerable truth in the criticism. Certain it is that there are two business points upon which the physicians of West Virginia could be more in union: gratuitous service and advertising.

The matter of gratuitous service unquestionably should be much more standardized than is now the case. Probably everybody agrees that the indigent should receive free medical service as a matter of humanity and community welfare. But when we consider the ministry, the dental, pharmaceutical, and nursing professions, there is wide variance as to charges. It might not be amiss for the local societies to consider this subject, each adopting such rules as seem pertinent to the particular locality served.

At the White Sulphur Springs meeting, the House of Delegates authorized a committee on advertising which should consider all phases of the subject and report with recommendations to the Clarksburg meeting in 1931. This committee should consider not only advertising *per se*, but the question of the news stories often given to the lay press. Some physicians seem to have a definite tendency to appear in print at every opportunity—a habit which may be in spirit much more unethical than running a card in a daily paper longer than the prescribed period. Moreover, another phase of the question the committee might take up is the propriety of pay advertising of the aims and accomplishments of medicine, a subject about which the laity now actually knows very little, but should know much.

Walter E. West

EDITORIAL

Automobile Emblems

On motion of Dr. S. S. Hall, of Fairmont, the house of delegates of the West Virginia State Medical Association at White Sulphur Springs adopted the automobile emblem of the American Medical Association as the official emblem of the West Virginia State Medical Association. Negotiations are already under way to secure these emblems, and, if possible, the name of the state association will be stamped on the A. M. A. emblem. A large number of the association members already have the A. M. A. emblem on their cars.

The action at White Sulphur Springs came at the request of Harry L. Brooks, superintendent of the West Virginia state police. Superintendent Brooks said that there were about a dozen different kinds of medical automobile emblems in use in West Virginia, and he wanted the Association to adopt an official emblem so that his men could be instructed to recognize it and to ignore the nondescript emblems.

Golden Library Contribution

The West Virginia State Medical Association takes this opportunity to acknowledge receipt of several hundred medical journals, periodicals, and books from the library of the late Dr. W. W. Golden, past president of the Association, who died at his home at Elkins last fall. The contribution was made to the Association library by Mrs. Sarah Golden, widow of Dr. W. W. Golden, and Dr. B. I. Golden, her son. The Association is deeply appreciative of this valuable addition to the state medical library.

ANNOUNCEMENTS

Dr. Holland at Harvard

Dr. Claude L. Holland, of Fairmont, is spending some time at Harvard, taking special work in pediatrics. He expects to return in the near future.

* * *

Mahogany certificate frames with removable backs can now be secured through the state association. They are made especially for the membership certificates issued to members of the West Virginia State Medical Association. A full-page advertisement concerning these frames can be found in the front advertising section of this JOURNAL.

There are few county society meetings during the summer months, with the result that by September there is a shortage of scientific material for publication in the JOURNAL. Secretaries of component societies are again urged to collect all papers and case reports presented at their meetings, and to send them to the JOURNAL for publication.

* * *

Dr. Isaac A. Bigger, associate professor of surgery at Vanderbilt University, has accepted the professorship of surgery at the Medical College of Virginia, Richmond, beginning August 15, 1930.

* * *

Dr. George E. Vincent, lately president of the Rockefeller Foundation, was the speaker at the ninety-second commencement exercises of the Medical College of Virginia, Richmond. This year there were 196 graduates: 95 in medicine, 23 in dentistry, 36 in pharmacy, and 42 in nursing.

* * *

Dr. Joseph Lyon Miller, of Thomas, West Virginia, was awarded the honorary degree of doctor of letters by the Medical College of Virginia, Richmond, at the commencement exercises on June 3, 1930. Doctor Miller is an alumnus of the college of 1900 and is distinguished as a medical historian, bibliophile, and collector of rare medical books.

* * *

The Medical College of Virginia, Richmond, has just received a grant of $120,000 ($40,000 from the Julius Rosenwald Fund and $80,000 from the General Education Board) for the construction of a dormitory and educational unit for the school of nursing of the St. Philip Hospital. This is an institution for negroes, owned and operated by the college.

COUNTY SOCIETY NEWS

Kanawha County

The Kanawha Medical Society held its last meeting for the fiscal year of 1929–1930 in the rooms of the state medical association on the evening of June 3, 1930. No scientific papers were presented, the meeting being devoted entirely to business matters. At the close of the business session, the society adjourned for the summer months.

The reports of the delegates to the state meeting were heard, and there was considerable discussion on the changes in the state medical defense fund. These changes were pointed out by Dr. C. A. Ray, who presented the amendment that was passed at

the White Sulphur Springs meeting. Dr. Ray also discussed several changes that were made in the Association constitution relative to the state officers and the length of the various terms of office.

The question of city public health work was brought up and the objects of the city health department were discussed by Dr. Hugh Robins, city health officer. The question of health work was also discussed with Dr. Robins by many members of the society who were present.

It was voted unanimously to invite the Parkersburg Academy of Medicine at Parkersburg to put on a program for the Kanawha Medical Society some time during the summer months. Details for the joint meeting are to be worked out later.

D. N. BARBER, Secretary.

Mercer County

A meeting of the Mercer County Medical Society was held on May 29, 1930, in the offices of Drs. Vermillion and Dickerson at Princeton. Fifteen members were present.

There was a paper by Dr. J. I. Markel, of Princeton, on "Blood Transfusion as a Therapeutic Agent." The paper was freely discussed by several doctors present.

Dr. Cecil F. Johnson was proposed for membership by Dr. Todd. This motion was tabled for the usual time.

Dr. A. H. Hoge and Dr. Sam Holroyd reported on the state meeting at White Sulphur Springs.

R. R. STUART, Secretary.

Central West Virginia

The summer meeting of the Central West Virginia Medical Society will be held at Webster Springs on July 16, 1930, and plans for the gathering have been practically completed. Dr. S. P. Allen, of Webster Springs, is working with Dr. J. B. Dodrill and Dr. C. C. Carson as a special committee to arrange for the program. Dr. Walter E. Vest, of Huntington, president of the West Virginia State Medical Association, has already accepted an invitation to address this meeting, and a record turn-out is anticipated.

Brooke County

Dr. H. F. Nolte was elected president of the Brooke County Medical Society at the regular meeting held at Wellsburg on the evening of June 5, 1930. Dr. Nolte will succeed Dr. J. C. Schulz, of Wellsburg, who served during the past fiscal year. Dr. W. J. MacDonald, secretary, was elected vice-president of the society, and Dr. L. J. Bernstein, of Wellsburg, was elected secretary-treasurer.

W. J. MACDONALD, Secretary.

Barbour-Randolph-Tucker

The Barbour-Randolph-Tucker County Medical Society met in the Hotel Randolph at Elkins at seven o'clock on the evening of May 15, 1930, with Dr. R. J. Condry, president, presiding. The first order of business was the approval of Dr. J. L. Bosworth, of Mill Creek, for honorary membership in the state association. The society also went on record as endorsing Dr. C. H. Maxwell, of Morgantown, for president of the state society for 1931. In addition, the society instructed its delegates to vote for a 1931 meeting place having greater features of attraction than golf—a place where all practicing physicians may have equal opportunities.

Dr. W. S. Magill, of Morgantown, the scientific essayist of the evening, was introduced by Dr. C. H. Hall, of Elkins. He gave a very extended and lucid talk on toxicology. Dr. Magill stated that criminal poisoning is now so common, and the means used are frequently so cunningly applied, that when legal action is resorted to in order to seek the poison used as well as the fixing of guilt, the greatest precaution should be observed in procuring the organs for examination. He pointed out that such examinations might require weeks to complete, thus incurring greater expense than counties are willing to pay.

Following the presentation by Dr. Magill, the society adjourned to meet in Elkins in August.

J. C. IRONS, Secretary.

Eastern Panhandle

The regular quarterly meeting of the Eastern Panhandle Medical Society was held at Park View Inn at Berkeley Springs on Wednesday, June 11. The president, Dr. G. P. Morison, was in the chair. Twenty-one members were present and heard the following program:

1. "Urethral Obstruction," by Dr. L. H. Brumback, of Hagerstown, Md. Discussion led by Dr. H. G. Tonkin, Martinsburg.

2. Reports on the recent state association meeting at White Sulphur Springs, made by Dr. T. K. Oates and Dr. W. R. Cameron.

In view of their long service in the practice of medicine and association with this society, it was unanimously agreed that the following doctors be elected honorary members: Dr. W. W. Brown, of

Shenandoah Junction, and Dr. A. J. Lemaster, of Belington.

The next meeting of the society will be held in Martinsburg in September.

W. R. CAMERON, Secretary.

Monongalia County

The regular meeting of the Monongalia County Medical Society was held in the Junior High School library at Morgantown on the evening of June 3, 1930. The scientific program consisted of a report of two interesting obstetrical cases by Dr. B. C. John, a report of a case of papillary cystadenomata of the ovary by Dr. W. H. Howell, and a report of a case of ectopic pregnancy by Dr. C. C. Romine. The reports of the delegates to the state meeting at White Sulphur Springs were also heard at this meeting.

G. R. MAXWELL, Secretary.

HOSPITAL NEWS

Joint Graduation Exercises

The five hospitals of Charleston, West Virginia, held joint graduation exercises in the high school auditorium on the evening of May 14, in connection with a community program celebrating Hospital Week. A total of twenty-nine nurses from the five training schools were given diplomas at that time. It was the first joint graduation exercise ever held in Charleston, and one of the first in this country.

The program for the graduation exercises was opened with the invocation by Bishop J. J. Swint, of Wheeling, who also delivered the address of welcome. The address to the graduating class was made by Mrs. Elsie Butler Groves, of Columbia University, New York City. Dr. G. C. Schoolfield, of Charleston, made the presentation of diplomas. The presentation of the hospital pins was made by Mrs. George Lounsbery, of Huntington, the first graduate nurse in the Kanawha Valley and the first president of the West Virginia Nurses' Association. After the Florence Nightingale pledge was given by the graduates, the benediction was pronounced by the Rev. W. V. Mallalieu, of Charleston.

Commenting upon the spirit of coöperation shown by the Charleston hospitals in holding joint exercises, Dr. Harry M. Hall, of Wheeling, president of the West Virginia Board of Examiners for Registered Nurses, had the following to say:

"I have before me a rather interesting invitation, and one which I think deserves wide advertisement over the country. It is from the faculty and senior classes of the five Charleston hospitals, meeting in joint exercises at the Charleston high school auditorium.

"Whether this has been a custom in the past or is a first attempt at such solidarity makes little difference. . . . It is distinctly a notable example of community and professional effort that could well be emulated all over the United States. In these days, when hospital management is still a matter of debate and when mammoth buildings of over a thousand beds would also seem to suggest that the personnel woul l be forgotten in the management of the mass, this gesture to pool interests on one thing may have a meaning hard to calculate at the present moment. If this can some day be extended to other things, I fancy it may solve problems that will serve as examples for many another perplexed locality. All in all, the whole thing has the significance of a noble example, and I can not tell when I have observed so heartening a performance.

"In the official capacity of president of the West Virginia Board of Examiners for Registered Nurses I take this opportunity to congratulate every hospital and every nurse represented in this joint graduation exercise, . . . and the men and women of Charleston for their admirable vision."

GENERAL NEWS

Convention Registration

The Kanawha Medical Society, with 37 members registered at the White Sulphur Springs meeting, led all other county societies in registration at the sixty-third annual meeting on May 20–22, 1930. The Greenbrier Valley Medical Society, with 16 members registered, had the largest percentage of any county with 72 per cent. The county societies with a registration of 15 or more members included Cabell, Greenbrier Valley, Kanawha, Mercer, and the Academy of Medicine of Parkersburg. The county societies with better than 30 per cent registration included Central West Virginia, Greenbrier Valley, Kanawha, Mercer, and Summers counties.

Below will be found a complete list of the county societies, with the total regisration of each society and the percentage of registration of each society:

County Society	*Registration*	*Percentage*
Barbour-Randolph-Tucker	3	10
Cabell	15	16
Central West Virginia	8	30
Eastern Panhandle	2	10
Fayette	11	20
Grant-Hardy-Hampshire-Mineral	3	10
Greenbrier Valley	16	72

Hancock	2	12
Harrison	11	14
Kanawha	37	32
Lewis	3	20
Logan	3	8
Marion	12	30
Marshall	2	7
McDowell	8	12
Mercer	16	30
Monongalia	7	15
Ohio	12	13
Parkersburg Academy	16	25
Preston	4	22
Raleigh	7	14
Summers	5	45

Committee on Advertising

The house of delegates at White Sulphur Springs, on motion of Dr. A. P. Butt of Elkins, authorized the appointment of a committee of three members of the Association to investigate the question of medical advertising in West Virginia and to report back at the Clarksburg meeting in 1931. Appointment of the committee was placed in the hands of President W. E. Vest, with the provision that Dr. R. A. Ireland, of Charleston, be one member of the committee.

Dr. Vest has just announced the appointment of this committee, with Dr. Ireland as chairman and Dr. A. P. Butt of Elkins and Dr. J. Ross Hunter of Charleston as the other two members. The committee will complete its work next spring, when its report is made to the 1931 house of delegates of the Association.

First Aid Industrial Service

To assist in the establishment of first-aid service in industrial plants employing less than five hundred people, the Policyholders Service Bureau of the Metropolitan Life Insurance Company has just released a booklet entitled *First Aid Service in Small Industrial Plants*. This publication is one of a series issued by the Industrial Hygiene service of the Bureau, dealing with the health of industrial and commercial workers.

The report, which is illustrated by photographs of first-aid rooms maintained by several industrial concerns, discusses the importance of instituting sound measures to insure the prompt and efficient care of small or "minor" injuries. The construction and equipment of a first-aid room, as well as the personnel necessary to staff it, are described in some detail.

As the labor laws in a number of states and provinces have established minimum requirements for the provision of first-aid equipment and facilities, and as the existing regulations are so varied that few generalizations regarding them can be made, an appendix has been incorporated into the report, giving in outline form a summary of the laws of each state. This outline shows what industries are required by the laws of the various states to make provision for first-aid treatment, as well as the standards which have been set up by the legislative bodies of these commonwealths.

In addition to *First Aid Service in Small Industrial Plants*, other publications in the industrial health series include *Physical Examinations in Industry* and *Industrial Dental Service*. Copies of these reports may be obtained by addressing the Policyholders Service Bureau, Metropolitan Life Insurance Company, New York City.

PUBLIC HEALTH

Natural Illumination

The Public Health Service for some time past has been conducting studies in natural illumination of school rooms. A report (Public Health Bulletin No. 188) recently issued deals with the effect of clouds on daylight illumination and on daylight ratios.

The science of lighting rooms by means of daylight has not kept pace with the science of artificial illumination. The fact that daylight is abundant and costs nothing has perhaps led to the delay in the development of the principles underlying the proper utilization of daylight.

This lack of knowledge of the present condition of the natural lighting of schools and factories has in recent years led to an intensive study of the actual conditions prevailing, and to a study of the principles underlying good daylighting. The United States Public Health Service is engaged in such a study. A preliminary report on the natural lighting of schools was published as Bulletin No. 159, and a second report, Public Health Bulletin No. 188, has recently been published.

The second bulletin gives an analysis of the effect of clouds upon the inside illumination (for desks in different portions of the school rooms and for rooms with different directions of exposure), the outside illumination, and the brightness of the sky. There is also given an analysis of the ratio of the inside illumination on a desk to the total outside illumination, and the ratio of the inside illumination to the outside sky brightness; also, the effect of clouds upon each of these.

TRANSACTIONS

Sixty-third Annual Meeting, White Sulphur Springs, West Virginia, May 20-22, 1930

General Meetings

The sixty-third annual meeting of the West Virginia State Medical Association was called to order at ten o'clock on the morning of May 20, 1930, in the ballroom of the Greenbrier Hotel, White Sulphur Springs, West Virginia, by Dr. James R. Bloss, acting for President Walter E. Vest of Huntington. The invocation was delivered by the Rev. Dr. Ben Roller, of White Sulphur Springs, and the address of welcome was made by Dr. H. L. Goodman, of Ronceverte, president of the Greenbrier Valley Medical Society. The response to the address of welcome was made by Dr. B. S. Rankin, of Kingwood. The morning session was concluded with two excellent papers, the first on "The Surgical Treatment of Thyrogenic Auricular Fibrillation," by Dr. E. R. Arn, of Dayton, Ohio, and the second on "A Correlation of the Clinical and Pathological Concepts of Hyperthyroidism," by Dr. W. M. Simpson, of Dayton, Ohio.

The afternoon session, with Dr. F. T. Scanlon of Morgantown presiding, was opened with the Oration on Surgery by Dr. Carl A. Hedblom, of Chicago. His subject was "The Surgical Treatment of Pulmonary Tuberculosis." Dr. Hedblom was followed by Dr. C. H. McCuskey, of Rochester, Minnesota, who presented a fine paper on "Adaptation of the Anesthetic to the Type of Disease or the Type of Operation." The afternoon session was concluded by Dr. M. Y. Dabney, of Birmingham, Alabama, who spoke on "The Relationship of the Specialist to the General Practitioner."

The president's annual address was delivered on the evening of May 20 by Dr. Walter E. Vest, of Huntington, whose subject was "Dollars and Disease." Dr. Scanlon presided at this meeting and appointed a committee, consisting of Dr. J. Howard Anderson of Hemphill, Dr. Roy Ben Miller of Parkersburg, and Dr. S. S. Hall of Fairmont, to go over and report on the president's message. The first day's program was concluded with Dr. Vest's address.

Dr. T. W. Moore, of Huntington, opened the program at 9:30 o'clock on the morning of May 21 with a most excellent paper on "Ophthalmology and General Practice." He was followed by Dr. Thomas W. Nale, of Edwight, who presented a paper on "Prevention of Puerperal Infection." Dr. F. C. Hodges, of Huntington, followed Dr. Nale with a paper on "Agranulocytosis." The morning session was concluded by Dr. Gabriel Tucker, of Philadelphia, who presented an interesting moving picture and talked on the subject of "Bronchoscopy in the Diagnosis and Treatment of Diseases of the Lungs."

On Wednesday afternoon, May 21, the three sectional meetings were held. Dr. Walter E. Vest presided over the Section on Internal Medicine, which was opened with a paper on "Surgery in Diabetes Mellitus," by Dr. James H. Smith, of Richmond, Virginia. Dr. Smith was followed by Dr. Andrew E. Amick, of Bluefield, who gave a paper on "Some Factors Influencing the Stability of the Nervous System in Infancy and Early Childhood." The sectional meeting was concluded with a paper on "Some Medical Aspects of Gastrointestinal Disorders," by Dr. R. J. Condry of Elkins.

The Section on Surgery was presided over by Dr. A. G. Rutherford, of Welch. Dr. R. W. Whitman, of Roanoke, Virginia, opened the meeting with a paper on "Acute Perforative Diverticulitis of the Sigmoid." He was followed by Dr. R. J. Wilkinson, of Huntington, with a paper on "Some Aspects of Gastric Surgery." Dr. C. Fred Fisher, of Clarksburg, closed the section with a paper on "A Plea for Reduction of Mortality in Appendicitis." At the close of the surgical section meeting, election of officers for 1931 was held. Dr. W. S. Fulton, of Wheeling, was elected president, and Dr. G. G. Irwin, Charleston, secretary.

The Section on Eye, Ear, Nose and Throat was held in the Card Room of the Greenbrier Hotel and was presided over by Dr. F. T. Scanlon, of Morgantown. The first paper was presented by Dr. E. C. Hartman, of Parkersburg, on "Lateral Sinus Disease." He was followed by Dr. Thomas O'Rourk, of Baltimore, who gave a paper on "Relation of Eye Disorders to Sinus Diseases." The eye, ear, nose and throat section was closed with a paper by Dr. M. F. C. Zubak, of Wheeling, on "Removal of Tonsils by Electricity." At the close of the section, election of officers for 1931 was held. Dr. S. S. Hall, of Fairmont, was named president, and Dr. G. A. Smith, Montgomery, secretary.

The convention banquet was held on the evening of May 21 in the dining room of the Greenbrier Hotel, with Dr. J. E. Rader, of Huntington, as

toastmaster. The speaker of the evening was Dr. R. F. Lischer, of Mascoutah, Illinois, who talked on the subject, "A Pen Picture of a Country Doctor." Other features of the banquet program included the presentation of a gold presidential charm to Dr. Walter E. Vest by Dr. Harry M. Hall of Wheeling. The annual convention ball was held on the evening of May 21, immediately following the banquet.

Dr. Vest called the meeting to order on the last morning of the convention, May 22, at nine o'clock. Dr. A. T. Post, of Clarksburg, gave a short report on the crippled children's work in West Virginia, and Miss May M. Maloney, of Fairmont, spoke briefly on "Why Nurses' Standards?" Dr. W. T. Henshaw, of Charleston, state health commissioner, also spoke briefly on the work of his department. The Oration on Medicine, which was the last order of business, was then delivered by Dr. George H. Bigelow of Boston, health commissioner of Massachusetts, on the subject, "Private Practice and the Public Health." The convention adjourned immediately following the oration by Dr. Bigelow.

Woman's Auxiliary

The annual meeting of the Woman's Auxiliary to the West Virginia State Medical Association was called to order by the president, Mrs. J. P. Lilly of Morgantown, in the Card Room of the Greenbrier Hotel on the morning of May 21, 1930. An interesting program was presented at this meeting, following which the members adjourned for a luncheon in the Tudor room of the hotel. The annual election of officers was held, with the following result:

President—Mrs. S. S. Hall, Fairmont.

First Vice-President—Mrs. A. H. Hoge, Bluefield.

Second Vice-President — Mrs. B. S. Brake, Clarksburg.

Recording Secretary—Mrs. Brinley John, Morgantown.

Corresponding Secretary—Mrs. J. S. Klumpp, Huntington.

Treasurer—Mrs. F. C. Hodges, Huntington.

Historian—Mrs. R. H. Edmondson, Morgantown.

The White Sulphur Springs meeting saw the retirement from office of Mrs. Lilly and the induction into the office of president of Mrs. W. C. Swann, of Huntington, the president-elect. Mrs. Swann was elected at the Martinsburg meeting in 1929.

Council Meeting

May 19, 1930

The council of the West Virginia State Medical Association met in the Card Room of the Greenbrier Hotel, White Sulphur Springs, at 3:30 o'clock on the afternoon of May 16, with Dr. Walter E. Vest, president, presiding in the absence of Dr. R. H. Dunn, chairman. Those present were Dr. Vest, Dr. R. B. Miller, Dr. C. A. Ray, Dr. C. H. Maxwell, Dr. G. D. Jeffers, Dr. S. S. Hall, Dr. C. G. Morgan, Dr. T. M. Barber, treasurer, and Mr. Joe W. Savage, executive secretary. Minutes of the previous meeting were dispensed with and approved as published in the WEST VIRGINIA MEDICAL JOURNAL. All reports of standing committees and special committees were referred to the house of delegates.

Dr. James R. Bloss, editor of the JOURNAL, reported for the board of publication on the affairs of the JOURNAL and the report was received and filed. Discussion of the report was carried on by Dr. C. A. Ray, Dr. W. E. Vest, Dr. G. D. Jeffers, Dr. S. S. Hall, Dr. C. G. Morgan, and Dr. C. H. Maxwell, and the JOURNAL was highly complimented for its many improvements during the last few years.

The reports of the treasurer and of the executive secretary were read, received, and filed. A committee, consisting of Dr. C. G. Morgan, Dr. S. S. Hall, and Dr. R. B. Miller, was appointed to audit the accounts of the secretary. A committee, consisting of Dr. C. H. Maxwell, Dr. R. H. Dunn, and Dr. H. G. Steele, was appointed to audit the accounts of the treasurer.

The next order of business was the reports of the district councillors. Dr. Morgan reported for the first district, Dr. Maxwell for the second, Dr. S. S. Hall for the third, Dr. R. B. Miller for the fourth, and Mr. Joe W. Savage, executive secretary, for the fifth and sixth districts.

Dr. J. L. Bosworth, of Mill Creek, 74 years of age and a member of the Barbour-Randolph-Tucker County Medical Society, was elected to honorary membership in the West Virginia State Medical Association.

Dr. Vest announced that nominations were in order for the new board of publication of the WEST VIRGINIA MEDICAL JOURNAL. On motion of Dr. S. S. Hall, the old board, consisting of Dr. J. R. Bloss, Dr. W. E. Vest, Dr. C. A. Ray, Dr. J. H. Anderson, and Dr. H. M. Hall, was reëlected unanimously.

The question of the advisability of continuing the Nicholson insurance policy of $25,000 was brought up and discussed by Drs. Vest, Barber, Maxwell, and Jeffers. It was the consensus of opinion that the policy should be carried as a business proposition. On motion of Dr. Maxwell, it was unanimously voted to pay the next premium on the Nicholson insurance policy and to keep the policy in force.

Under the head of new business, Dr. C. G. Morgan, chairman of the medical defense committee, presented his report to be made the same evening before the house of delegates. Dr. Vest then explained the reason for his action in authorizing an expenditure of $240 in a suit against Dr. J. F. Biggart of Mullens, pointing out that the legal question was one that involved the entire profession in West Virginia. Dr. Vest announced that he employed Attorney John V. Ray to file a petition for rehearing before the state supreme court in the Biggart case in an effort to settle the status of expert witnesses. He pointed out that Mr. Ray was successful in his efforts on behalf of the Association. On motion of Dr. Morgan, the expenditure authorized by Dr. Vest was unanimously approved and a vote of thanks was given to Dr. Vest and Mr. Ray for their prompt action on behalf of the Association.

Dr. Maxwell, chairman of a special committee to consider the advisability of reëstablishing the medical defense fund of the Association, then reported on the work of the committee and presented his report of a proposed amendment to the Association by-laws to reëstablish the fund. Dr. S. S. Hall commented on the proposed amendment, pointing out that there should be no provision for a retainer fee in the new by-law. The same stand was taken by Dr. T. M. Barber. Dr. Ray then spoke against the length of the terms of the defense committeemen as outlined in Dr. Maxwell's report, Dr. Ray being of the opinion that the committee should be appointed each year instead of once every six years, as proposed by Dr. Maxwell. Dr. Ray outlined his own proposed amendment to reëstablish the defense fund, and pointed out that it had been drawn up by a qualified attorney.

Speaking for the regular defense committee, Dr. Morgan pointed out that the old fund allowed a maximum of $300 for legal services in one case and presented statistics to show that most of the cases settled by the fund had been for the maximum amount.

Dr. Vest, in speaking on the proposal to reëstablish the defense fund, said he would like to see the fund carried on by the Association. He advised, however, that the fund be reëstablished in such a way that it would benefit the doctors and the professional medical witnesses as well as the attorneys involved. He also stressed most strongly that every member of the Association should be educated to carry commercial malpractice insurance and should not depend upon the defense fund for full protection. Dr. Jeffers also spoke along the same line, advising that all members carry commercial insurance. He said the real value of the defense fund was in its moral effect.

After Dr. Maxwell had stressed the importance of the defense fund to the doctors in the rural districts, discussion on the proposed reëstablishment of the fund was discontinued until the evening meeting of the house of delegates.

Dr. S. S. Hall reported briefly upon the case of *Gidley* vs. *Drs. Hall and Greene* in the circuit court of Lewis county, which had been tried several years before. He requested that the case be reopened and the matter was referred to the committee on medical defense.

Mr. Savage presented a proposed new charter form for county societies, which, after a few changes had been made, was adopted on motion of Dr. Barber. Dr. Vest announced that the next meeting of the council would be held immediately after the meeting of the house of delegates on the morning of May 22 in the Tudor room of the Greenbrier Hotel.

Just before adjournment, Dr. S. S. Hall announced his resignation from the council, to take effect on December 31, 1930. Dr. Hall stated that, after being elected to represent the third district, he had moved into the first district of the Association, and said that his resignation was presented for that reason. In view of the reason given by Dr. Hall, the resignation was accepted by Dr. Vest.

There being no further business to come before the council, the meeting adjourned at 5:45 P.M.

* * *

May 22, 1930

The council of the West Virginia State Medical Association met in the Tudor room of the Greenbrier Hotel, White Sulphur Springs, on May 22, 1930, with Dr. W. E. Vest, president, presiding. Those present were Dr. R. H. Dunn, Dr. Vest, Dr. T. M. Barber, Dr. C. G. Morgan, Dr. S. S. Hall, Dr. C. W. Waddell, Dr. C. H. Maxwell, Dr. T. K. Oates, Dr. R. M. Hood, and Mr. Joe W. Savage, executive secretary.

Dr. Hood, upon being recognized, requested that a section on pediatrics, to meet at the state convention each year, be established by the Association. Dr. Vest announced that the proposal would have to lay on the table for one year, and suggested that the matter be again presented at the next annual meeting of the Association. He asked Dr. Hood to work out plans for such a section, to be presented at that time.

Mr. Savage requested authority to republish the constitution and by-laws of the Association, in view of the number of changes made therein during the past several years. This authority was granted upon motion of Dr. Morgan.

Dr. Vest, in lieu of the authority vested in him by the reëstablishment of the medical defense committee by the house of delegates, announced his appointment of the following committeemen, who were approved by the council: First district, Dr. C. G. Morgan; Second district, Dr. B. S. Rankin; Third district, Dr. R. M. Hood; Fourth district, Dr. J. E. Rader; Fifth district, Dr. H. G. Steele; Sixth district, Dr. C. A. Ray.

Dr. Vest, as president and *ex-officio* chairman of the defense committee, also announced that Mr. John V. Ray would continue to serve as attorney for the Association and for the committee on medical defense.

There being no further business to come before the council, the meeting adjourned at 12:45 P.M.

JOE W. SAVAGE, Executive Secretary.

House of Delegates

May 19, 1930

The house of delegates of the West Virginia State Medical Association met in the Tudor room of the Greenbrier Hotel, White Sulphur Springs, at 8:25 o'clock P.M., with Dr. W. E. Vest, president, presiding.

Those present were Dr. Vest, Dr. J. A. Guthrie, Dr. R. M. Sloan, Dr. T. K. Oates, Dr. G. A. Smith, Dr. Ralph Hogshead, Dr. Thomas Bess, Dr. T. C. Giffin, Dr. H. L. Goodman, Dr. D. G. Preston, Dr. F. B. Harrington, Dr. S. Berardelli, Dr. D. N. Barber, Dr. C. E. Copeland, Dr. W. H. Parker, Dr. E. W. Howard, Dr. B. F. Bone, Dr. A. G. Rutherford, Dr. W. B. Stevens, Dr. B. S. Clements, Dr. W. H. St. Clair, Dr. David Littlejohn, Dr. H. T. Phillips, Dr. E. S. Bippus, Dr. R. U. Drinkard, Dr. H. W. Bond, Dr. R. H. Boice, Dr. R. S. Widmeyer, Dr. C. L. Muhleman, Dr. C. E. Grimm, Dr. A. P. Butt, Dr. G. D. Jeffers, Dr. James R. Bloss, Dr. C. A. Ray, Dr. H. M. Hall, Dr. C. G. Morgan, Dr. C. H. Maxwell, Dr. S. S. Hall, Dr. R. B. Miller, Dr. T. M. Barber, and Mr. Joe W. Savage, executive secretary.

Reading of the minutes of the previous meeting was dispensed with and approved as published in the WEST VIRGINIA MEDICAL JOURNAL.

The following reports were received and filed:

Committee on Public Policy and Legislation, by Dr. R. A. Ireland.

Committee on Publication, by Dr. James R. Bloss.

Committee on Professional Relations, by Mr. Joe W. Savage.

Committee on Medical Defense, by Dr. C. G. Morgan.

Committee on Scientific Work, by Dr. Howard T. Phillips.

Committee on Permanent Home, by Mr. Savage.

Committee on Necrology, by Dr. W. E. Vest.

Report of the treasurer, by Dr. T. M. Barber.

Report of the executive secretary, by Mr. Savage.

After some discussion, the following amendments to Article IX of the constitution, proposed by Dr. C. A. Ray and having lain on the table for one year, were unanimously adopted:

"Section 1. The officers of this association shall be a President, two vice-presidents, an Executive Secretary, a Treasurer, twelve Councillors to be elected as provided in Section 2, and two Councillors-at-large, who shall be the retiring President and his immediate predecessor.

"Section 2. The officers, except the Councillors, shall be elected annually. The terms of the Councillors shall be for two years, one-half being chosen each year. No Councillor shall be eligible to succeed himself after four years as Councillor, but may be elected after two years' absence from the Council. All these officers shall serve until their successors are elected and installed.

"Section 3. The officers of this association shall be elected by the House of Delegates on the evening of the first day of the annual session, immediately following the President's address.

"Section 4. The retiring President shall be Chairman of the Council for the year following his term of office, and shall not be eligible thereafter for any elective office of the association except for delegate to the American Medical Association, Board of Publishers, or Scientific Committee member.

"Section 5. The President, the two Vice-Presidents, and the Treasurer of this association

shall be members of the House of Delegates by virtue of their respective offices.

"Section 6. All by-laws conflicting with this act are hereby repealed."

Dr. Maxwell, as chairman of a special committee to investigate the advisability of reëstablishing the medical defense fund, made his report and recommended that the medical defense fund of the Association be reëstablished. Dr. Vest ruled that the matter would have to lay on the table for one day, and tabled the proposal to come up before the meeting of the house of delegates for final action on May 22, 1930.

Under the head of new business, Dr. S. S. Hall moved that the automobile emblem of the American Medical Association be adopted as the official emblem for automobiles of members of the West Virginia State Medical Association. The motion was seconded by Dr. C. G. Morgan and carried.

Dr. A. P. Butt moved that a committee of three members, of whom Dr. R. A. Ireland shall be one, be appointed by the president to report on the ethics of advertising at the 1931 annual meeting. The motion was seconded by Dr. C. A. Ray and carried. Dr. Vest announced that he would take the appointment of the committee under consideration and announce his appointments later.

The meeting adjourned at 10:10 P.M.

* * *

May 22, 1930

The house of delegates of the West Virginia State Medical Association met in the Tudor room of the Greenbrier Hotel, White Sulphur Springs, at 11:25 o'clock on the morning of May 22, 1930, with Dr. W. E. Vest, president, presiding.

Those present were Dr. Vest, Dr. B. I. Golden, Dr. R. J. Wilkinson, Dr. F. A. Scott, Dr. R. M. Sloan, Dr. F. O. Marple, Dr. C. C. Carson, Dr. M. T. Morrison, Dr. T. K. Oates, Dr. W. Ross Cameron, Dr. C. W. Stallard, Dr. G. A. Smith, Dr. J. M. Spinks, Dr. Ralph Hogshead, Dr. H. F. Coffman, Dr. Thomas Bess, Dr. T. C. Giffin, Dr. H. L. Goodman, Dr. D. G. Preston, Dr. Robert C. Hood, Dr. F. V. Langfitt, Dr. J. E. Corbin, Dr. J. F. Williams, Dr. B. S. Brake, Dr. A. T. Post, Dr. D. N. Barber, Dr. W. P. Black, Dr. C. E. Copeland, Dr. O. H. Bobbitt, Dr. Robert King Buford, Dr. W. H. Green, Dr. George Snyder, Dr. E. T. W. Hall, Dr. W. H. Parker, Dr. F. E. Brammer, Dr. C. J. Carter, Dr. L. C. Davis, Dr. C. T. Francis, Dr. B. F. Bone, Dr. A. G. Rutherford, Dr. W. B. Stevens, Dr. C. F. Hicks, Dr. David Littlejohn, Dr. C. C. Ballard, Dr. E. B. Tucker, Dr. F. T. Scanlon, Dr. R. C. Price, Dr. C. F. Boyers, Dr. H. T. Phillips, Dr. E. S. Bippus, Dr. R. U. Drinkard, Dr. A. K. Hoge, Dr. Russell Bond, Dr. R. H. Boice, Dr. R. S. Widmeyer, Dr. T. L. Harris, Dr. C. L. Muhleman, Dr. B. S. Rankin, Dr. A. U. Tieche, Dr. R. G. Broaddus, Dr. C. O. Henry, Dr. H. P. Linsz, Dr. A. P. Butt, Dr. J. E. Rader, Dr. Sam Holroyd, Dr. J. H. Anderson, Dr. John H. Simpson, Dr. George D. Jeffers, Dr. James R. Bloss, Dr. C. A. Ray, Dr. H. M. Hall, Dr. R. H. Dunn, Dr. C. W. Waddell, Dr. C. G. Morgan, Dr. C. H. Maxwell, Dr. S. S. Hall, Dr. R. B. Miller, Dr. F. T. Scanlon, Dr. T. M. Barber, and Mr. Joe W. Savage, executive secretary.

The election of officers was the first order of business, and the following new officers of the Association were elected for the year 1931:

President—Dr. C. H. Maxwell, Morgantown.

First Vice-President—Dr. Albert H. Hoge, Bluefield.

Second Vice-President—Dr. H. L. Goodman, Ronceverte.

Treasurer—Dr. T. M. Barber, Charleston.

Councillor, First District—Dr. C. W. Waddell, Fairmont.

Councillor, Second District—Dr. T. K. Oates, Martinsburg.

Councillor, Third District—Dr. George Snyder, Weston.

Councillor, Third District (short term)—Dr. M. T. Morrison, Sutton.

Councillor, Fourth District — Dr. Roy Ben Miller, Parkersburg.

Councillor, Fifth District—Dr. A. G. Rutherford, Welch.

Councillor, Sixth District—Dr. R. H. Dunn, South Charleston.

Chairman, Scientific Committee — Dr. F. C. Hodges, Huntington.

Members Scientific Committee—Dr. L. C. Davis, Fairmont, and Dr. R. D. Roller, Charleston.

Member Professional Relations Committee—Dr. John W. Moore, Charleston.

A. M. A. Delegate—Dr. James R. Bloss, Huntington.

A. M. A. Alternate Delegate—Dr. Walter E. Vest, Huntington.

Convention City, 1931—Clarksburg.

All other committees and committee members up

for reëlection were retained by the house of delegates.

The next order of business was consideration of the proposal of Dr. Maxwell to reëstablish the medical defense fund of the Association. Dr. Maxwell, after presenting his report on the advisability of reëstablishing the fund, presented Section 1 of Chapter XI of the by-laws, which read: "The medical defense fund is hereby reëstablished and is made retroactive to January 1, 1930."

A motion to adopt this section was made by Dr. Waddell, seconded by Dr. Golden, and carried unanimously.

A substitute report on the method of operating the defense fund was then presented by Dr. C. A. Ray and adopted on motion of Dr. C. G. Morgan. The sections presented by Dr. Ray were as follows:

Section 2. The Committee on Medical Defense shall consist of six members of the Association, to be appointed each year by the incoming president, who shall be *ex-officio* chairman of the committee. One member shall be selected from each Councillor District.

Section 3. When a member of the Association is sued for malpractice, he shall employ such attorney or attorneys to defend his case as he may see fit, and at his own expense, except as hereinafter provided. If the assistance of the Medical Defense Committee is desired, he shall at once forward to the member of the committee from his district a written statement from the secretary of his county society that he is a member in good standing and has paid his dues as hereinafter provided, a full report of the case, and thereafter he shall furnish the committee with such information and copies of such records, pleadings, etc., as may be requested.

Section 4. It shall be the duty of each committeeman to investigate all claims for malpractice against a member of the Association in his district that may be brought to his attention, and if, in his judgment, the case is one worthy of defense, he shall assist and coöperate with the member sued in the defense thereof. If a committeeman holds a case to be one not worthy of defense, the member sued may appeal to the full committee, should he so desire.

Section 5. In each case deemed worthy of defense, the committeeman shall, without delay, arrange a conference with the member sued and his attorney, and shall render them such assistance in defending the case as he can. When he deems a case to be of sufficient importance, the committeeman shall refer it to the attorney of the Association hereinafter referred to for his assistance and advice. It shall particularly be the duty of the committeeman to assist in having present at the trial such medical or expert witnesses as may be needed.

Section 6. A committeeman may expend the sum of $100.00 in any one case in securing the attendance at trial of necessary medical or expert witnesses; and, with the consent of the Medical Defense Committee and the approval of the Council, a sum not to exceed $500.00 may be expended in any one case of particular importance to the medical profession. In any case in which the Medical Defense Committtee is unanimously of the opinion that the litigation will be a financial hardship on the defendant, he may be allowed from the fund for attorney's fees a sum not to exceed $100.00. A medical or expert witness who is compelled to leave his county or home town in order to attend a trial shall be allowed a sum not to exceed $25.00 a day, and hotel and traveling expenses; and a committeeman shall receive the same allowances for attending trials away from his county or home town.

Section 7. The Council shall employ a competent attorney for this Association, upon such terms as may be agreed upon between them, and, when deemed necessary, cases of unusual complexity or more than ordinary importance may be referred to him by the Medical Defense Committee or the members thereof for his advice and assistance in the defense thereof.

Section 8. The Medical Defense Committee shall, at each regular meeting of the Council, make a detailed report of each case defended, including therein a statement of all expenses incurred in such defense; and, if approved by the Council, the Council shall order the treasurer to pay said expenses, and shall transmit the report to the Association in the regular way. No judgment against a member nor any settlement of a claim against a member shall be paid by the Association.

Section 9. The funds to be expended by the Medical Defense Committee shall be obtained as follows: In addition to the regular dues of this Association, each member, at his option, shall be assessed one dollar ($1.00) per year, to be paid with the Association dues. No member shall be entitled to the benefits of this fund and Medical Defense Committee unless he (or she) is a member in good standing of the West Virginia State Medical Association and has paid this assessment for the current calendar year prior to the date of the alleged mal-

practice and the institution of suit. All members who have failed to pay their Association dues and their assessment prior to April 1st of the current calendar year shall not participate in this defense fund; but they may be reinstated upon the payment of the same, but only for the remainder of the calendar year. No other funds of the Association shall be expended for this purpose. A balance from prior years may be expended with the approval of the Council; and if the expenses of the committee in any year in which no such balance is available shall exceed the amount received for that year, the amount available shall be distributed *pro rata* among those to whom the fund is indebted for attending trials as expert witnesses, unless the Council shall otherwise direct.

Section 10. Nothing in this chapter contained shall in any wise interfere with the defense of a member by an insurance company or like association.

Dr. H. P. Linsz moved that Dr. Robert M. McMillen, Dr. J. Leonard Eskey, and Dr. J. L. Bosworth be presented as honorary members of the Association to the American Medical Association for affiliate membership. This motion was seconded and carried.

Dr. J. Howard Anderson moved that a vote of thanks be extended to the management of the Greenbrier Hotel for the many courtesies extended to the members during the meeting. This motion was seconded and carried.

Dr. B. I. Golden brought up the advisability of devoting a part of the time of the state meetings to a seminar course in one or two subjects. This matter was given recognition and referred to the new committee on scientific work.

Dr. C. T. Francis brought up the question of a compulsory automobile insurance law in West Virginia. This matter was referred to the committee on legislation after some discussion.

Mr. Savage then took the chair and Dr. Vest took occasion to thank all members in attendance for their coöperation and assistance in making the meeting a success. He then proposed that an invitation be extended to the Medical Society of Virginia to hold one of their future meetings in West Virginia, and that a fraternal invitation be sent to the Virginia Society by the West Virginia State Medical Association. This was put in the form of a motion by Dr. Golden, seconded by Dr. R. H. Dunn, and carried.

Dr. Harry M. Hall then offered a resolution of appreciation and congratulations to the president, Dr. Vest, on the admirable manner in which the convention was conducted. This motion was seconded and carried.

There being no further business to come before the house of delegates, the meeting adjourned at 1:30 P.M.

JOE W. SAVAGE, Executive Secretary.

COMMITTEE REPORTS

Public Policy and Legislation

In the absence of a regular session of the West Virginia state legislature for 1930, the committee on public policy and legislation anticipated a year of comparative ease. The committee's hopes, however, were blasted by Governor Conley when he called a special session of the legislature to consider the much-talked-about new code.

Let me say at the outset that the new code had us worried, because we knew nothing whatever about its contents. As a matter of fact, it had everybody in the state worried, because no one in the state had any idea what was contained therein. Consequently, when the code was taken up, chapter by chapter, by the special joint committee of the legislature, it required the constant attendance of your committee representative. This was the first move that was arranged.

Our second step was to employ Mr. John V. Ray, Association attorney, to go over Chapter 30 of the new code, containing the medical practice act, etc., and to compare it word for word with the old medical practice act. Mr. Ray made this comparison and reported that few changes had been made. He further reported that in the changes in the new code there was nothing detrimental to the medical profession. The new code was to our advantage, he pointed out, in that it clarified some of the old provisions that had been rather hazy in the past. After receiving the report from Mr. Ray, the committee felt considerably easier, but nevertheless kept on the job.

There was one important change in the new code of interest to the medical profession. This change was found in Chapter 44, relating to the estates of decedent persons. Under the old law the undertaker was the only creditor who had a preferred claim against insolvent estates of decedents. Under the new code this provision was changed to include both doctors and hospitals up to $50. While this amount is rather small, especially as far as the hospitals are concerned, it nevertheless leaves the doc-

tors and hospitals better off than they were before, when they were common creditors. Under the new code they are preferred creditors up to $50, and common creditors on the balance, if any.

No changes were made in Chapter 30, relating to the medical practice act, although an effort was made to lower the standards for chiropractors. We were not called upon to fight this effort, as a ruling from the chair automatically killed the proposal. This chiropractic proposition was their biennial attack on the medical practice act which we have killed so many times that our battle line is more or less a matter of routine.

No one seems to know just what happened to Chapter 44, and no one will know until the code commission makes its revised report. Chapter 44 was vigorously opposed by the legal profession, not because of the provision which favored the practice of medicine, but because the entire legal structure involving estates was completely changed. The opposition to this chapter set forth that if Chapter 44 was passed it would be necessary for the members of the legal profession to go back to college. Be that as it may, there were a number of changes made in Chapter 44, and while your committee could find no change concerning the preferred medical claims, yet we feel like making no definite announcement until the revised report is made public. It should be carried in mind that the code is being revised by the legal profession, so the fate of Chapter 44 is considerably in doubt. It is probably difficult for the members of the medical profession, not having been present at the special session, to appreciate the significance of this statement concerning Chapter 44. However, those who were present and who saw the entire pattern of the new code shuffled and scrambled in every direction, no doubt wonder how it will ever be pieced together again. Your committee is numbered among those who wonder.

Your committee assisted the automobile club in getting passed an act requiring applicants for permits to drive automobiles to pass an examination before being permitted to drive. Our newspaper article on this subject, published while the legislature was in session, received favorable editorial comment throughout the state.

The code commission wrote into their code an act requiring applicants for marriage license to furnish a doctor's certificate of health before being granted a permit to marry. This act was killed in committee.

We must be alert against the encroachments of "state medicine," and also the evils sometimes present under the guise of group practice.

In closing, I wish to bring to your attention a subject that demands your earnest and immediate consideration. A short time ago, Dr. Will Mayo said: "Hospitals must adopt better business methods, whine less, and think more. Half the population of the United States finds the cost of hospitalization and nursing a great burden." Surgeon General Cummings says: "The situation of excessive cost of hospital and medical service presents a challenge to the profession and must be met by a readjustment." They might just as well have named the doctor alone in their indictment, because the effect will be that the doctor will have the principal burden of any readjustment.

What are we going to do? Much nation-wide publicity has been given to the discussion of this subject—in many cases by people less qualified than this group.

Some one has asked, "Are we about to have established 'group practice' or 'state medicine'?"

Your committee earnestly desires that more of the men of our Associations offer suggestions as to how to frame our "public policies" and "legislative policies" so as to preserve the dignity of our profession, and assure adequate reward for our investments and our labors.

Your committee wishes to thank your secretary, the members of our association in the legislature, and others who did their full share in the battle for our rights.

More doctors are needed in the legislature.

R. A. IRELAND, Chairman.
R. H. WALKER
JAMES MCCLUNG
C. H. OGDEN
D. A. MACGREGOR.

Publication Committee

The Publication Committee has but little to report to you concerning its activities during the past year. There have been some changes made in the physical make-up of your publication which we think are already noted by all of you. Your committee trusts that these changes in the physical appearance of the JOURNAL meets with your approval.

During the past three years the circulation of our publication has increased from approximately 1,000 copies per month to, at this time, 1,175 per month. This represents the actual net paid circulation of

the JOURNAL and does not include copies to advertisers, libraries, and so on. At the present time it is necessary for us to purchase an additional 75 copies per month to take care of the increase since the first of the year.

The JOURNAL, from a financial standpoint, is in a healthy condition, and we now have in the JOURNAL fund approximately $3,500. The accurate figures in this respect will be given to you by the report of the secretary. We have every hope that the JOURNAL will continue to be an earning asset of the organization.

Your Publication Committee has steadfastly maintained the attitude that the JOURNAL of the State Medical Association has a field all to itself, and that the function of the state JOURNAL differs widely from the purely scientific medical journal. Your committee believes that our publication should be the medium for the expression of the members, and for the publication of the papers of the membership throughout the state as they are presented to the various societies. There are many papers published which probably do not have great merit from a scientific standpoint, but they do have merit in that they are developing our own membership into better physicians because of the fact that the member has to study, to carefully observe cases, and to think in a more scientific, professional way in order to prepare his paper. Your committee feels that this should be encouraged, and that papers presented before the various county societies should be published. It is true that, occasionally, your Publication Committee finds it impossible to publish a paper. Occasionally one is unfit to appear in a medical journal. We have been criticized at times because of this condition.

Your committee probably is criticized in some quarters for not undertaking new departments, and because the general policy which has been adopted does not meet with the approval of some of our members. We can only say to you that, individually and collectively, we have given careful consideration to all matters which have been presented to us, and that decisions as to policies or to the publication of articles has been the majority opinion of your committee's five members.

During the past year, on a few occasions, the question of publishing communications has arisen. The committee has steadfastly held to its original decision to not print a communication which is controversial in character.

It has been the aim of the Publication Committee to adhere steadfastly to the principle of effacing the individual members of the committee from the pages of the JOURNAL, with the exception of papers and addresses presented before medical organizations. Editorials and material of similar character have represented either the unanimous or the majority opinion of the committee.

That we may have made some errors in judgment is only to be expected. We do feel, however, that the JOURNAL, as it is now appearing, speaks for itself. If it should be the pleasure of the Council to continue the present Publication Committee, we assure you that we will continue to give our very best thought and care to a continuance of this progress which our JOURNAL has made.

Respectfully submitted,

JAMES R. BLOSS,
C. A. RAY,
WALTER E. VEST,
HARRY M. HALL,
J. HOWARD ANDERSON.

Committee on Professional Relations

Your committee on professional relations has one major achievement to report for the year just passed. It was worked out several months ago with the office of the executive secretary, and has been in operation since that time. The plan was as follows:

About four years ago the Kanawha Medical Society and one or two other county societies throughout the state engaged in a newspaper advertising campaign upon what we called the "Pay Your Doctor First" idea. This campaign was fairly successful. The Kanawha Medical Society inserted a quarter-page advertisement each Sunday in the *Charleston Gazette* for a year, asking the general public to take care of their doctor bills along with their other financial obligations. I think the other county societies followed the same plan. The only objection to the plan was the rather excessive cost for the newspaper advertising campaign, which was paid through a proportionate assessment on each doctor. When the time came to collect for the advertising it was decided not to continue the campaign further.

We started to work on this same plan with the idea of transforming it into a state-wide campaign. The two publications having state-wide circulation are the *West Virginia Review* and the Wild Life League Journal, *West Virginia Wild Life*, with a combined circulation of approximately 50,000 copies per month. Mr. Savage approached both of these publications on the subject of an exchange of adver-

tising space with the WEST VIRGINIA MEDICAL JOURNAL. Both publications were agreeable to such an exchange, and the rest was easy. We simply prepared our advertising copy for the *Review* and the *Wild Life* journal and sent it in. It now runs regularly in these two magazines, and, in return, the WEST VIRGINIA MEDICAL JOURNAL carries *Review* and *Wild Life* advertisements in whatever space is available.

The question might arise as to just what is the worth of such an advertising campaign. The very nature of this question implies that the campaign does have some worth. If it does have merit, then it is worth while, for it doesn't cost the doctors anything and it doesn't cost the Association anything. The advertising space given up by the JOURNAL is known as "filler" space; *i.e.*, the space that is left over after all paid advertising is inserted. Your committee feels that the campaign has considerable merit, and that this service to the profession is well worth while.

The usual amount of newspaper publicity stories have been sent out during the past year, and the various news services such as the Associated Press and the United Press have been utilized. One story concerning the WEST VIRGINIA MEDICAL JOURNAL was carried by three different national news agencies and was published on the front page of almost every paper in the United States. In addition, the Associated Press carried a part of the publicity in connection with this state meeting. The committee formulated the policy about three years ago of sending out less publicity material but better and more important publicity material to the state newspapers. By adhering to this policy we have secured much better results and the stories that have been sent out have received much better consideration. The committee feels that the past year has been very successful as far as its own work is concerned.

Respectfully submitted,

J. R. SCHULTZ, Chairman.
A. G. RUTHERFORD,
W. R. GOFF,
E. P. SMITH.

Committee on Medical Defense

Your committee on medical defense has been advised by the treasurer that there was a cash balance in the bank on May 1, 1930, of $1,468.55. When our report was made at the Martinsburg meeting in 1929 the bank balance was $2,255.66. A word about the receipts and expenditure since that time:

Actual cash receipts in 1929, after our Martinsburg report was made, amounted to $137.89. This includes both payments into the fund from membership and interest on investments, making a total balance of $2,393.55. No funds have been transferred to the medical defense fund during the present year because the fund was abolished at the Martinsburg meeting in 1929. However, most of the Association members have contributed to the fund on the theory that it would be reëstablished, and these contributions, amounting to approximately one thousand dollars, are available at any time that the fund is reëstablished. At this time, however, this has nothing to do with the committee on medical defense.

From our total balance of $2,393.55 we have paid out $925.00 since the Martinsburg meeting in the settlement of four cases, leaving a cash balance at the present time of $1,468.55. We understand that these figures have been audited by a certified public accountant and found correct.

The total disbursements of $925 were paid out as follows:

Dr. W. F. Dailey, Terra Alta.....	$300.00
Dr. J. W. DeVebre, Ronceverte....	300.00
Dr. J. R. Vermillion, Princeton....	300.00
Dr. George Fordham, Wyco.....	25.00
Total.....	$925.00

There is one claim now pending before the committee on medical defense and amounting to $270 that has not yet been paid. It is the bill for the attorney of the Association, Mr. John V. Ray, for services rendered in the case of Maude Howell *versus* Dr. J. F. Biggart, from the circuit court of Wyoming county. I would like to report briefly on that case. Mrs. Howell was being treated by Dr. Biggart, and, during the treatment, Dr. Biggart left town. Mrs. Howell sued for malpractice, and, when the case came up for trial, she was the only person who testified to the fact of malpractice. The case was thrown out of court and Mrs. Howell appealed to the state supreme court. The supreme court overruled the Wyoming county circuit court and remanded the case for trial. The supreme court, in its opinion, set up a ruling that lay testimony (non-scientific testimony) could establish the fact of malpractice, and that expert scientific medical testimony was not necessary. This ruling was contrary to all previous rulings on the subject. Heretofore it has been held in this state that the fact of

malpractice could not be established unless established by scientific medical testimony.

The far-reaching effect of this ruling becomes at once apparent. Had it been allowed to stand, there would have been three disastrous results:

1. It would have placed lay testimony on the same plane and would have given it equal value with scientific testimony.

2. It would have given the plaintiff a much better chance of winning each malpractice suit, thereby having a decided tendency to increase the number of malpractice suits in West Virginia.

3. It would have either increased the rates for commercial malpractice insurance in this state or else caused the insurance companies writing this insurance to withdraw, as they have done in other states where the medical profession is not protected by adequate law.

Realizing the importance of this ruling by the supreme court, Dr. Vest, president of the Association, authorized Mr. Ray to file a petition for a rehearing with the higher tribunal. Mr. Ray filed his petition, setting forth, on behalf of the West Virginia State Medical Association, the reasons why the ruling should be set aside, and citing numerous cases to bolster his opinion. After receiving this opinion the supreme court rewrote its original opinion and clarified it to read that the Biggart case was remanded for trial, not because the plaintiff had established the fact of malpractice with her testimony, but because she had shown that Dr. Biggart left town without making any provision for her further treatment. In other words, the suit against Dr. Biggart was not affected, but the ruling against the medical profession of West Virginia was. Our status concerning scientific testimony has been reëstablished, and we now have the same legal protection that we had before the Biggart case came up.

Dr. Biggart was not a member of the Association and the bill was not contracted in his defense. It was contracted in the defense of every member of this association, and it was therefore thought advisable to pay the bill out of the medical defense fund.

Of the other four disbursements from the medical defense fund, I might say that the Dailey and DeVebre cases were unusually hard fought and that their respective bills for legal services ran considerably more than the $300 paid to them by the Association. The Vermillion case did not reach court, or, if it did reach court, it was immediately thrown out. The attorney's bill in this case amounted to $301.50. The Fordham case grew out of a contract practice, and, while fought through two courts, the bill came to only $25. That is the claim put in by Dr. Fordham and it was immediately taken care of.

There are two or three pending suits at the present time that have been reported to the committee, but no claims have been presented, as the cases have not yet been settled. It might be interesting to point out that the total bills paid and contracted during the past twelve months amount to $1,195. This is approximately $195 more than was paid into the defense fund during the same period. We are skating on comparatively thin ice, but we are still making both ends meet, thanks to a cash reserve.

Respectfully submitted,

C. G. MORGAN, Chairman.
H. G. STEELE,
H. A. WALKUP.

Permanent Home Committee

Your special committee, appointed three years ago for the purpose of investigating the possibility of securing a permanent home for the West Virginia State Medical Association at some future date, has nothing of an especial nature to report at this time, except to say that we are one year nearer to the goal. In other words, the time will come when the Association has a permanent home in Charleston, the state capital, and each year that passes brings us just one more year closer to our objective.

There is one development of considerable importance. During the past year a new type of roller printing press has been placed on the market to sell at a price around five thousand dollars. Prior to this year the cost of such machines was in the neighborhood of twenty-five thousand dollars. This new machine again brings up the possibility of equipping our prospective state home with a complete printing plant with which to publish the WEST VIRGINIA STATE MEDICAL JOURNAL and to print all stationery, programs, reprints, cards, certificates, and the like. The printing bill of the Association, including the JOURNAL and reprints, is about eight thousand dollars a year. With our own plant, which could be installed for approximately $10,000, we could do our own printing at a cost of well under six thousand dollars a year. In other words, there is a possibility that with an investment of ten thousand dollars we could save two thousand dollars

each year. Such a possibility is unusually interesting when considered in connection with the establishment of a permanent home for the Association.

Your committee reported last year that the McDowell County Medical Society had voted unanimously to set aside ten per cent of its net surplus each year into a separate account, to be known as a building fund for a permanent home for the Association to be erected in Charleston. I am advised that this fund is still being kept up, and that it will be turned over to the Association when the erection of a state home is decided upon. In addition to this, the Kanawha Medical Society has purchased considerable furniture for the present headquarters of the Association in Charleston, with the idea in mind that it will eventually aid in the establishment of a permanent home. If some of the other larger societies would fall in step with the McDowell and Kanawha societies, it would not l long until our dream of a permanent home would become a reality.

Your committee feels that its chief duty at this time is to keep this matter before the state association. That is why this report was prepared—in order to bring to your attention again the possibilities for a state home and to point out the various trends in the direction of our goal. With this idea in mind, this report is respectfully submitted.

PERMANENT HOME COMMITTEE:
W. P. BLACK, Chairman.
W. B. STEVENS,
E. L. ARMBRECHT,
L. V GUTHRIE,
C. O. HENRY.

Committee on Necrology

DR. PERRY BOSWORTH, Huttonsville.
DR. CHARLES O'GRADY, Charleston.
DR. J. W. AYLOR, Culpepper, Va.
DR. W. W. GOLDEN, Elkins.
DR. L. F. KORNMANN, Clarksburg.
DR. W. A. THORNHILL, Charleston.
DR. FREDERICK W. GROOME, Elverton.
DR. R. A. HAYNES, Clarksburg.
DR. JOHN G. PETTIT, Hopemont.
DR. FRANK LEMOYNE HUPP, Wheeling.
DR. JOHN H. CAMPBELL, Wheeling.
DR. C. A. LATHAM, Huntington.
DR. JOHN A. TYREE, Danville, Va., formerly of Page, W. Va.

Report of the Executive Secretary

Already there has been presented, or will be presented, reports from the committees on professional relations, medical defense, public policy and legislation, permanent home, publication, and scientific work. There is little left for me to tell you of the work of the past year. In the presentation of the other reports, I hope you have seen the interrelation between all the standing committees and the office of the executive secretary. Many of the most important accomplishments of the past year have been or will be dealt with in full in the various committee reports, and I will not take up your time with a further recitation upon these matters. Those things which have not been dealt with in full—the JOURNAL, the library, the finances of the Association, and the membership—they are the things I will deal with here.

The Library.—The Association headquarters were moved from two small rooms in the Professional building, Charleston, to three large rooms in the Public Library building shortly prior to the Martinsburg meeting last year. At that time there was considerable talk of establishing a state medical library. The facilities, or many of them, were already at hand. Approximately twenty-five medical journals and periodicals were received each month in exchange for the WEST VIRGINIA MEDICAL JOURNAL. Furthermore, sufficient space was available. Consequently, when I attended the conference of secretaries at the A. M. A. headquarters last November I made it a special point to look over the mechanics of operation of the A. M. A. library. At the council meeting last November a brief start had already been made and the council gave me authority to establish a filing system on a small scale, but similar to that in use by the American Medical Association. Acting under this authority, steps toward a real library were immediately taken, and we now have something well worth while. Our exchange list was built up and connections were established with a number of publishing houses for review copies of late medical books. In addition, the Kanawha Medical Society gave $120 to the library to be used for subscriptions to medical journals that were not received as exchanges. Among the journals subscribed to out of this fund were the *British Medical Journal*, the *Lancet*, the *International Journal of Surgery*, *American Heart Journal*, *American Journal of the Diseases of Children*, *American Journal of the Medical Sciences*, *Annals of Surgery*, *British Journal of Surgery*, *Archives of*

Internal Medicine, and *Archives of Dermatology*. The Kanawha Medical Society also purchased for the library a new Gould medical dictionary. The Kanawha society has a permanent library committee to work with the office of the executive secretary.

In addition to the contribution from the Kanawha society, we were presented with the bound volumes of the *Journal of the American Medical Association* from 1899 to 1923. This came from Dr. James Putney, of Charleston. We have also received many other contributions of books and medical journal files. We now have approximately 500 medical books in the library and receive monthly more than 50 current medical journals. The library is being used more and more all the time and is coming to play an important and an interesting part in the activities of the state association. The total cost to the Association for what we now have is somewhere in the neighborhood of one hundred and fifty dollars.

Membership.—The membership of the Association has enjoyed a most interesting and encouraging increase since last year. This increase is interesting because the total increase is shared by every councillor district. In other words, there is not a councillor district in the state that has not increased its membership during the past twelve months. At the Martinsburg meeting in 1929 there were 975 paid-up members of the Association. Today there are 1,036 paid-up members, or an increase of 61 members over the previous year. This does not include the delinquent members, most of whom will come in before the year is out. The delinquent list last year totaled 93, while this year it totals 110, or an increase of 17. This is partly accountable for by the fact that last year's report was made up on May 20, while this year's report was made up on May 13. One week will make quite a difference in a membership report, especially at this time of the year, for a large number of delinquents are always brought in the last couple of days before the state meeting. Including the delinquent members, our total membership last year was 1,068. This year it is 1,146, or an increase of 78 members. The total membership at the close of the present year bids fair to go over the 1,200 mark for the first time in the Association's history.

A part of the past year's increase can be attributed to the formation of one new society and the reinstatement of another. The new society was formed in Mason county last July. The society that was reinstated was the Hancock County Medical Society, which came back in the fold last November. It might be pointed out that Hancock was the first society in the state to have its 1930 membership paid up one hundred per cent. Other societies in the one hundred per cent list this year include Central West Virginia, Grant-Hardy-Hampshire-Mineral, Monongalia, Doddridge, Lewis, and Summers. This is the largest list of one hundred per cent societies we have had during the past ten or twelve years.

Finances.—On January 1, 1927, the West Virginia State Medical Association was in debt, having borrowed several hundred dollars about six weeks previous to that date for sufficient funds to finish out the year. Today, the actual cash assets in money and negotiable securities of the Association amount to $18,687.95. That is, if the Association should go out of business today and settle up its affairs, that is the amount of actual cash it would have on hand, not counting either the accounts receivable of the Association and the JOURNAL or the furniture and fixtures. I might say that the persons handling this money are sufficiently bonded for the full protection of the Association. In giving this figure, it should be carried in mind that the major income for 1930—that is, membership—has already been received; whereas there will be additional expenditures to maintain the office of the Association. I feel sure, however, that when the year 1930 is ended these actual cash assets will still be more than fifteen thousand dollars. This will have been accomplished in four years' time.

The present cash assets cited above are made up as follows:

General Fund	$ 7,086.94
Nicholson policy value	2,125.00
West Virginia Medical Journal	3,623.01
Indigent Fund	3,977.15
Defense Fund	1,468.55
Operating Account	407.30
Total	$18,687.95

The Journal.—I have already given an insight into the affairs of the JOURNAL in quoting the total cash assets at $3,623.01. This is an increase in actual cash of $1,299.92 during the past twelve months. At Martinsburg last year the actual cash balance was $2,323.09, with no outstanding obligations. Today it is $3,623.01, with no outstanding obligations. In other words, the JOURNAL has cleared a little better than $100 per month for the past year, in spite of the fact that the publication

cost has increased $80 per month since January 1, 1929. The increased cost of publication was caused by an increase of sixteen pages in the size of the JOURNAL and a change to a much better grade of paper. Outside of this financial report, I think the JOURNAL will speak for itself. It is one of the five or six largest state medical journals published in this country, and it has better paper, a better cover, and better type than almost any other state medical journal in the United States. I have nothing to do with the scientific material published therein, so I will not go into that. I do want to point out, however, that the JOURNAL does need more scientific material, and I hope the county secretaries will take note and send in all papers presented before their respective societies.

There are dozens of minor items and phases of the work of the executive secretary that might be incorporated in this report, but their presentation would be rather tedious to most of you. In this report I have attempted to give you a good, clear idea of the general progress the Association is making with its finances, its membership, and its journal. I hope you will find it satisfactory.

Respectfully submitted,

JOE W. SAVAGE, Executive Secretary.

Committee on President's Address

We, the undersigned committee, appointed to review and report upon the address of our president, Walter E. Vest, respectfully submit the following:

First: We wish to give expression to the fact that we feel highly indebted to Dr. Vest for bringing to us for our consideration this most timely subject and one of such vital importance to our profession and to us as individuals.

Second: We wish to thank him for the masterly and exhaustive manner in which he has mustered the facts and figures bearing upon all the angles of this question.

Therefore, Be It Resolved: That, when published in our JOURNAL, we urge the careful and thoughtful perusal of this valuable contribution by each and every member of the Association.

Further, Be It Resolved: That we recommend that the publicity committee of each component society be urged to bring before the public of their individual locality, in the manner deemed most advisable by them, a suitable presentation of the relative increase in cost of other individual and family expenditures as compared with the increase in cost of medical-surgical care, so that the true ratio and status may be known.

J. HOWARD ANDERSON,
ROY BEN MILLER,
SOBISCUS S. HALL.

District Membership Reports

(Up to and including May 13, 1930.)

FIRST DISTRICT

	Members		Delinquents	
	May 13, '29	May 13, '30	May 13, '29	May 13, '30
Brooke	12	14	0	2
Hancock	0	17	0	0
Marion	59	49	5	16
Marshall	24	28	0	5
Ohio	86	87	7	19
Taylor	8	8	2	1
Totals	189	203	14	43

SECOND DISTRICT

	Members		Delinquents	
	May 13, '29	May 13, '30	May 13, '29	May 13, '30
Barbour-Randolph-Tucker	29	28	3	3
Eastern Panh'dle	18	26	5	0
Grant-Hampshire-Hardy-Mineral	27	31	1	0
Monongalia	50	53	0	0
Preston	21	14	0	6
Totals	145	154	9	9

THIRD DISTRICT

	Members		Delinquents	
	May 13, '29	May 13, '30	May 13, '29	May 13, '30
Doddridge	4	4	0	0
Harrison	69	69	11	7
Lewis	13	18	1	0
Central W. Va.	24	26	3	5
Totals	110	117	15	12

FOURTH DISTRICT

	Members		Delinquents	
	May 13, '29	May 13, '30	May 13, '29	May 13, '30
Cabell	77	81	1	2
Acad. Med. of Parkersburg	55	59	4	4
Totals	132	140	5	6

FIFTH DISTRICT

	Members		Delinquents	
	May 13, '29	May 13, '30	May 13, '29	May 13, '30
Logan	36	31	5	4
Mercer	39	58	13	5
McDowell	49	48	5	4
Mingo	21	19	7	4
Summers	11	13	0	0
Totals	156	169	30	17

SIXTH DISTRICT

	Members		Delinquents	
	May 13, '29	May 13, '30	May 13, '29	May 13, '30
Fayette	57	57	0	1
Greenbrier	20	27	8	5
Kanawha	125	119	9	15
Raleigh	41	44	3	3
Totals	243	247	20	24

Report of Finances

TREASURER'S ACCOUNT

May 20, 1929, to May 1, 1930.

Balances in Banks, May 20, 1929		$ 6,739.30
Receipts		
Dues:		
Rec'd from Exec. Secretary	$9,786.84	
Exec. Secretary's Account in Bank of Commerce	558.00	
Cash on Hand in Exec. Secretary's Office	140.00	10,484.84
Interest on Bank Balance		3.17
Total		$17,227.31
Disbursements		
Expense Account, Office of Exec. Secretary (see statement)	$7,381.21	
Annual Premium, Life Insurance on Dr. H. G. Nicholson*	1,301.00	
Joe W. Savage, Bonus	400.00	
Safety Deposit Box Rent	2.00	
Transferred to:		
Medical Defense Fund	81.83	
Indigent Fund	974.33	10,140.37
Balance May 1, 1930		$ 7,086.94
Balance represented by:		
Capital City Bank	$5,763.23	
Charleston National Bank	517.05	
Kanawha Valley Bank (Savings Account)	108.66	
Bank of Commerce	558.00	
Cash on Hand	140.00	
	$7,086.94	

* Life Insurance Policy dated July 1, 1926; cash surrender value after payment of four annual premiums is $2,125.00.

WEST VIRGINIA MEDICAL JOURNAL ACCOUNT

May 15, 1929, to May 1, 1930.

Balance in Banks, May 15, 1929		$ 2,323.09
Receipts		
Advertising	$6,437.65	
Less Discounts	911.58	$5,526.07
Circulation		43.08
Interest on Bank Balances		28.89
		5,598.04
Total		$ 7,921.13
Disbursements		
Printing and Engraving*	$4,545.37	
Postage	120.00	
Miscellaneous Expense	41.92	4,707.29
Balance, May 1, 1930		$ 3,213.84
Balance represented by:		
Charleston Nat'l Bank	$ 480.60	
Bank of Commerce	200.00	
Liberty Bonds ($2,500.00 par value)	2,533.24	
	$3,213.84	

* Printing and Engraving includes the cost of the May, 1930, issue of the JOURNAL in the amount of $357.70, for which issue advertising revenue has not been collected.

INDIGENT FUND

May 20, 1929, to May 1, 1930.

Balance, May 20, 1929		$ 3,086.35
Receipts		
Transferred from Treasurer's General Account	$ 974.33	
Interest on Federal Land Bank Bonds	75.00	
Interest on Bank Balances	36.47	1,085.80
Total		$ 4,172.15
Disbursement		
Funeral of Dr. Lind		195.00
Balance, May 1, 1930		$ 3,977.15
Balance represented by:		
Federal Land Bank Bonds ($1,500.00 par value)	$1,525.00	
Kanawha Banking & Trust (Savings Account No. 17266)	2,452.15	
	$3,977.15	

MEDICAL DEFENSE FUND

May 20, 1929, to May 1, 1930.

Balance in Bank, May 20, 1929		$ 2,255.66
Receipts		
Transferred from Treasurer's General Account	$ 81.83	
Interest on Bank Balance	56.06	137.89
Total		$ 2,393.55
Disbursements		
Dr. Daily, Terra Alta	$ 300.00	
Dr. J. W. DeVebre, Ronceverte	300.00	
Dr. George Fordham, Wyco	25.00	
Dr. J. R. Vermillion, Princeton	300.00	925.00
Balance in Bank, May 1, 1930 (Kanawha National Bank, Savings Account No. 16845)		$ 1,468.55

EXPENSE ACCOUNT—OFFICE OF EXECUTIVE SECRETARY

May 1, 1929, to May 1, 1930.

Balance in Bank, May 1, 1929		$ 1,000.00
Reimbursements from Treasurer's Account for eleven months ended Mar. 31, 1930		7,381.21
Total		$ 8,381.21
Disbursements		
Salary of Executive Secretary	$3,800.00	
Office Salaries	1,503.83	
Office Supplies and Expense	405.49	
Office Rent	600.00	
Library Expense	175.67	
Telephone and Telegraph	159.27	
Postage	212.25	
Traveling Expense	350.57	
Convention Expense	341.49	
Miscellaneous Unclassified	425.34	7,973.91
Balance in Charleston National Bank, May 1, 1930		$ 407.30

Approved by
CHARLES G. MORGAN,
SOBISCUS S. HALL,
ROY BEN MILLER.

Auditor's Report

At the request of Mr. Joe W. Savage, your executive secretary, I have audited the receipts and disbursements of the several accounts of the West Virginia State Medical Association. Beginning with the balances as set forth in the statements submitted to the Council in May, 1929 (published in the July, 1929, issue of the WEST VIRGINIA MEDICAL JOURNAL), I have made test verifications of all receipts, examined cancelled checks and vouchers covering all disbursements, reconciled balances in bank with statements from the depositories and inspected the securities held in the Indigent and Medical Journal Accounts.

Policy of insurance on the life of Dr. Hugh G. Nicholson was examined and ascertained to be in proper order.

Fidelity bonds are being carried on Dr. Barber, treasurer, in the amount of $12,500, and on Mr. Savage, executive secretary, in the amount of $5,000.

The records have been kept with great care, for which Mr. Savage should be highly commended.

I respectfully suggest that considerable labor and some expense could be saved by having all the records kept by the executive secretary's office instead of the treasurer keeping part of the accounts, as has been done heretofore. Under the present method, no good purpose is served by splitting the accounts, and it appears to be that it is in no way a double check. Of course, however, an adequate fidelity bond and a periodical audit by a professional accountant is desirable in any event.

CERTIFICATE

I have audited the receipts and disbursements of the West Virginia State Medical Association, composed of the Treasurer's Account, the West Virginia Medical Journal Account, Indigent Fund, Medical Defense Fund, and the Expense Account of the executive secretary's office, for the periods shown by the several statements, and

I hereby certify that all receipts of record have been fully accounted for as stated in the attached statements, and that the balances at the end of the period, composed of cash and securities, have been verified.

Respectfully submitted,

BEN H. PUCKETT, C.P.A. (Ohio).

MEDICO-LEGAL

Duodenal Ulcers and Trauma

Landry v. Phoenix Utility Co. (La.), 124 So. 623.—On July 18, 1927, Landry, a carpenter, died as the result of hemorrhages from duodenal ulcers. Until May 12, 1927, he had been in good health, enjoyed a good appetite, and suffered no physical discomforts whatever. On that day a piece of timber struck him on the chest, causing a double fracture of the eighth rib and a simple fracture of the ninth. After the accident, he complained of pains in his side, which became more severe, notwithstanding treatment by several physicians. They attributed his suffering to the injury to his chest. It was not until a few days prior to his death that a röntgen examination revealed the duodenal ulcers that caused his death. An autopsy showed multiple ulcers of the duodenum, hemorrhages, and acute and chronic diffuse nephritis. The widow of the deceased employee contended that the fatal duodenal ulcers were either caused by the blow on his chest or aggravated by it so as to precipitate his death. She therefore brought suit against his employer. From a judgment against her, she appealed to the Court of Appeals of Louisiana.

There was considerable expert testimony in the record, and, said the Court of Appeals, "it is, as is not unusual in such cases, conflicting." All of the experts who testified seemed to agree, however, that the cause of gastric or duodenal ulcers is unknown. One of the expert witnesses, who testified in support of the widow's claim, supported in a measure by two others, maintained that gastric and duodenal ulcers might be caused by external trauma. It is possible, he said, for blood clots or emboli to form in the blood as a result of the trauma, and to be carried by the blood and find lodgment in any part of the body. Lodging in the brain, they cause paralysis and death, and, lodging in the duodenum or stomach, they produce ulcers. Expert witnesses testifying in opposition to the widow's claim disputed the correctness of the hypothesis advanced by the witnesses for the other side and denied the possibility of such ulcers resulting from external trauma. The pathologist who performed the autopsy concurred in the opinion of these experts, that the fracture of the ribs of the deceased had nothing to do with his death.

"To the untutored mind of this court," said the Court of Appeals, "it would appear that a severe

injury, resulting in the fracture of two ribs, one of them in two places, such as was suffered by the deceased, Landry, would have some causal relation, or would at least have contributed, to his demise, which occurred about two months after the injury, particularly since the testimony is to the effect that he had previously enjoyed good health and was not known to complain of any physical illness prior to the accident." But, said the court, we are not privileged to indulge our impressions in a matter so technical, in view of the expert testimony in the record, which clearly preponderates to the effect that duodenal ulcers, the admitted cause of Landry's death, could not be produced as a result of external trauma. The trial court, who heard the experts testify, denied the widow's claim, because of the preponderance of the expert testimony against her contention. The Court of Appeals sustained the action of the trial court, because of that preponderance, adding: "If we and our brother below have erred, the responsibility must rest with the medical profession and not the judiciary.

MONTHLY MORBIDITY REPORT
BY COUNTIES

MAY, 1930	Chickenpox	Diphtheria	German Measles	Hookworm Disease	Influenza	Measles	Meningitis, Cer. Spi.	Scarlet Fever	Smallpox	Tuberculosis, All Forms	Typhoid Fever	Whooping Cough
Barbour	----	----	----	----	----	1	----	----	----	----	1	15
Berkeley	----	----	----	----	----	----	----	1	1		3	
Boone	----	----	----	----	----	51	----	3	1	1	----	10
Braxton	4	1	----	2	----	----	----	2	----	1	1	
Brooke	9	----	----	----	4	5	----	8	1	----	----	
Cabell	----	3	----	----	----	7	----	2	30	----	3	4
Calhoun	----	3	----	----	----	----	----	1	----	----	----	
Clay	----	----	----	----	----	----	----	----	6	8	----	
Doddridge	----	----	----	----	13	----	----	----	----	----	6	4
Fayette	----	----	----	----	----	23	----	1	3	----	2	
Gilmer	----	1	----	----	----	----	----	----	----	----	1	
Grant	----	----	----	----	3	1	----	1	----	----	----	15
Greenbrier	----	----	----	----	----	1	----	10	1	----	----	
Hancock	----	----	12	----	----	9	----	14	----	4	----	
Harrison	39	2	----	----	----	6	----	11	2	3	----	40
Jackson	----	----	----	----	----	----	----	----	6	----	----	
Jefferson	1	----	----	----	----	----	----	----	----	----	----	
Kanawha	53	5	----	----	5	18	1	4	2	30	8	31
Lewis	2	1	----	----	----	7	----	8	----	----	----	1
Lincoln	----	----	----	----	14	32	----	----	4	1	2	4
Logan	1	1	----	----	----	65	----	----	12	3	3	1
McDowell	----	1	----	----	----	3	----	----	10	----	----	
Marion	3	4	----	----	2	6	----	12	3	----	3	7
Marshall	1	2	----	----	----	21	----	3	----	12	----	1
Mason	----	1	----	----	14	----	----	----	----	1	----	
Mercer	1	----	18	----	1	77	1	1	2	8	----	4
Mineral	1	2	----	----	2	10	----	1	----	9	----	11
Mingo	3	2	----	----	----	----	1	----	22	----	----	1
Monongalia	6	----	----	1	----	4	----	4	----	2	9	5
Monroe	----	----	----	----	----	----	----	----	----	----	----	4
Nicholas	----	2	----	----	----	----	----	----	1	----	----	
Ohio	38	----	1	----	----	38	2	5	----	17	8	23
Pocahontas	----	2	----	----	----	----	----	----	----	----	----	
Preston	1	----	----	----	----	----	----	----	----	1	1	4
Putnam	----	----	----	----	----	3	----	1	----	----	----	5
Raleigh	40	----	----	----	----	14	2	1	12	7	4	
Randolph	----	----	----	----	----	----	----	1	----	----	----	
Ritchie	1	----	----	----	----	----	----	2	----	1	----	
Tucker	----	----	----	----	----	----	----	----	----	----	1	
Tyler	----	----	----	----	----	----	----	----	----	2	----	4
Wayne	----	1	----	----	----	----	----	----	14	2	----	
Webster	----	----	----	----	----	----	----	1	----	----	----	
Wetzel	----	----	----	----	----	----	----	----	----	1	----	
Wirt	----	----	----	----	----	----	----	2	----	----	----	
Wood	----	3	----	----	----	14	----	7	26	1	1	9
TOTALS	204	37	31	3	58	416	7	107	159	115	57	201

The West Virginia Medical Journal

Directed and Edited by the Committee on Publication

[The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible]

JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - Huntington

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WALTER E. VEST, Huntington — HARRY M. HALL, Wheeling — J. HOWARD ANDERSON, Marytown — C. A. RAY, Charleston

MR. JOE W. SAVAGE, *Secretary-Business Manager*, Charleston

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SOME ASPECTS OF GASTRIC SURGERY *

By R. J. WILKINSON, M.D., F.A.C.S.
Huntington, W. Va.

In reviewing the more recent literature dealing with the diagnosis and treatment of gastric and duodenal ulcers, one is amazed and bewildered by the great difference of opinion existing among our leading surgeons, internists, and experimental workers. However, this very fact is not without interest, because it demonstrates that this subject is being studied intensively, and a determined, earnest effort is being made to reveal not only the etiological factors but the most trustworthy diagnostic procedures, and the treatment that offers the greatest benefit to these patients. It is probably fortunate that there is such a wide difference in the method of treating this type of patient, because any hard and fast rule in dealing with pathological conditions often reacts to the detriment of the patient and to the chagrin of the physician unless all of the essential factors are clearly understood. If we could perfect our diagnostic acumen and have a clear-cut mental picture of the existing pathology together with a reasonable conception of the physiological action of the organs involved, I am confident that the method of treatment could be selected to suit best the individual case. In other words, I think every patient is a law unto himself, and it behooves us to prescribe the treatment in keeping with each individual requirement. Judging by the marvelous accomplishments of the medical profession in dealing with other complex medical and surgical problems, I have abiding faith in the ultimate solution of this very interesting condition; namely, ulcer.

In reaching an intelligent opinion regarding this type of case the coöperation of almost the entire hospital staff is required, because a correct diagnosis can be made only by carefully correlating the history and physical findings together with the x-ray and laboratory reports. Probably in handling no other type of patient is greater teamwork necessary, for, verily, one department is dependent upon the other if the ultimate results are to be at all gratifying.

I shall make no attempt, in this short paper, to consider the symptomatology of ulcer, since every physician should at least be familiar with the cardinal symptoms to the extent of not allowing these patients to suffer indefinitely without being given the chance of a correct diagnosis. Probably the besetting sin of physicians has been the promiscuous habit of treating symptoms without any effort being made to determine the causative factors.

During the past few years it has been my privilege, in collaboration with my distinguished colleague, Dr. Walter E. Vest, to study a considerable number of these patients. This study has been of interest to us, and it is my desire to bring to your attention some of the interesting observations made

* Read before the West Virginia State Medical Association at White Sulphur Springs, May 21, 1930.

and the apparent results obtained. Not infrequently patients present themselves for relief from gastric distress, but, when carefully studied, are found to be suffering from some remote pathological condition such as chronic appendicitis, Lane kink, ptosis, cholecystitis, or pelvic inflammation, the gastric symptoms being a reflex manifestation. On the other hand, any of the above-named conditions may exist as a complication to a well-defined gastric or duodenal ulcer, and in this event it is obvious that, regardless of the ulcer treatment decided upon (with the exception of ptosis), these conditions are amenable to surgery and should be given immediate attention.

It might be advisable to call your attention to two rather unusual types of patients that present symptoms strikingly suggestive of ulcer. The first and most frequent is pulmonary tuberculosis, and the other is thyroid dysfunction. A careful chest examination will, in most instances, establish the diagnosis if it is a pulmonary condition; and, likewise, a basal metabolism estimation will furnish valuable information regarding the thyroid activity.

The fact that most of our patients are employees of the Chesapeake and Ohio railroad and are dependent upon their daily wages for sustenance made it imperative that we adopt a general basis for treatment that would be reasonably safe and at the same time incapacitate them for the shortest possible period. Therefore, it was concluded that all ulcers not complicated would be treated medicinally—which, of course, meant a proper dietetic regimen together with every facility for general building up of the body. Food is given frequently; that is, between meals and at bedtime; tobacco is entirely eliminated and these patients are urged to take an abundance of rest when off duty.

We are all familiar with the work of Rosenow and other investigators regarding the etiology of ulcer, and are persuaded that all foci of infection, regardless of location, should be eliminated, even though it only affects the ulcer by eliminating toxins, thereby giving the patient a greater resistance.

Surprising as it may seem, our results have been most gratifying except in those patients who refused or have failed to carry our instructions; or in which an incorrect diagnosis was made. The following case report is a striking example of the latter type:

CASE I.—Miss M., white, age 29, admitted to the hospital January 4, 1930, with a history of having been operated upon in 1915 for acute appendicitis and again in 1924 for adhesions, by a surgeon of unquestionable reputation.

Her chief complaint was epigastric discomfort associated with pain throughout the abdomen. All physical findings were negative except for a rather marked habitus enteropticus.

The röntgenological findings revealed a definite filling defect with considerable barium retention after two hours. There was fairly marked ptosis.

Blood and urine examinations were negative.

Gastric findings: The test meal showed an achlorhydria, while the fasting meal showed free hydrochloric acid of 26, with a combined reading of 40.

The patient was put to bed in a Trendelenburg position. Ulcer diet was strictly adhered to and belladonna given, but after three weeks there was no improvement noted, so an operation was advised.

Upon opening the abdomen we were first attracted to the supposed ulcer. There was a distinct indurated area the size of a dime, or larger, on the anterior surface of the duodenum, which was taken to be an ulcer. Before deciding upon the operation for relief of this condition we began to look for other pathology, and, much to our surprise, we found a well-defined kinking of the terminal ileum (Lane) which was producing a partial obstruction; also, there were adhesions between the ascending and transverse colon. After freeing these adhesions we turned our attention to the ulcer, and, to my surprise, the indurated area had moved for a distance of one inch and was occupying a position decidedly lateral, eventually disappearing, only to return again. It was apparent that we were dealing with a pylorospasm and nothing further was done. She was put on a liberal diet, given a support for ptosis, and further instructed regarding outdoor exercise. This patient has steadily improved; her appetite is good, and there has been a gain of many pounds. All gastric discomfort has disappeared.

It is indeed surprising that so few surgical authorities lay any stress whatever upon the importance of Lane kink, or, if you prefer to so call it, a partial obstruction of the terminal ileum. I have been struck by the frequent occurrence of this condition and the very definite symptoms it causes. I would dare make the assertion that this is found in at least ten per cent of our appendicitis patients, and often it has been necessary to operate upon patients for this condition who have previously had the appendix removed. As to the cause for this condition, I believe the authorities pretty well agree that this is a congenital defect.

CASE II.—Mr. C., white, age 45, admitted to the hospital February 9, 1929, with severe, intermittent, cramplike pains in the abdomen. There was constant belching and occasional eructation of sour liquid, no vomiting. This patient was first seen in 1915 and operated upon for chronic appendicitis, no effort being made to explore the duodenum and no inspection made for Lane kink.

In 1924 he had a severe gastric hemorrhage and was subsequently operated upon for duodenal ulcer by the late Dr. Murat Willis, of Richmond, Va. The ulcer was excised after the method of Mickuleits. This patient failed to improve physically as one would expect. However, he resumed his occupation and continued work, although he still suffered more or less abdominal pain and gastric distress.

While attending a convention in 1927, in an adjoining state, he again bled profusely. Following this, he was put on very strict diet and his general habits were regulated, with the result that he gained in weight and was generally improved except for abdominal cramps. This patient did not adhere to his ulcer diet except for a few weeks after operation for ulcer and after the second hemorrhage.

In November, 1929, he again bled profusely, and for a while his life was in jeopardy. After several weeks of rest in bed he was operated upon. We found the duodenum free from adhesions, but there was a scar at the site of the previous operation, with considerable induration. The stomach was negative. There was a marked Lane kink present, which no doubt accounted for his pain and perhaps indirectly affected his stomach and duodenum. The partially obstructed ileum was freed, but it was decided not to disturb the duodenum. This patient has since gained twenty-five pounds, is free from gastric discomfort, and there is no abdominal pain. He is eating most generously and in every way is improved.

Surgery has been advised in all suspicious malignant cases, in those patients who show a definite gastric retention, and in those who fail to respond to treatment. The operation has been selected to suit the individual case, whether it be a simple posterior gastrojejunostomy, a pyloroplasty, or some type of resection. Our end results have led us to believe that each method has its advantage if properly selected; but we do condemn the practice of doing a mutilating, hazardous operation, such as a subtotal gastrectomy, when one of the more simple and far less dangerous procedures will suffice. This more radical operation should, to my mind, be reserved for malignancies, for unquestionably a large number of these patients can be cured if operated upon early and thoroughly. Contrary to our earlier teaching, it is now fairly well established that ulcers rarely if ever become malignant. I believe that the pre-operative treatment is most essential, and that failure to observe some of the fairly well established rules in handling these patients often results in failure. In the first place, no case with acute hemorrhage should be subjected to surgery. Transfusion is indicated, and an abundance of rich milk will control most of these cases until they are properly studied and the treatment is decided upon. We have found that repeated gastric lavage for several days, together with ten per cent glucose solution intravenously, is indicated in those patients with gastric retention. It allows the stomach to assume more nearly a normal size, and may prevent a rather serious complication that is sometimes seen when the stomach markedly contracts after gastric surgery. Case number three demonstrates this complication:

CASE III.—Mr. C., white, age 64, admitted to the hospital August 16, 1929. This patient had a history of epigastric burning and distress for twenty-five years, especially a few hours after meals. There had been an occasional vomiting with considerable gas eructation. For the past year or so he had practically lived on liquid diet.

This patient was seen by Dr. Walter E. Vest three years previously and advised to undergo an operation for an almost completely obstructed duodenum. He was given the same advice at the Mayo Clinic a few weeks later, but declined surgery.

At operation, August 22, 1929, we found the duodenum embedded in adhesions with a general thickening of its walls. There being no glandular involvement, and considering the fact that the growth was duodenal, we concluded there was no malignancy and decided a no-loop gastroenterostomy was the operation of choice. The stomach was dilated, notwithstanding the fact that he had been carefully prepared by repeated gastric lavage for several days.

This patient suddenly became cyanosed after incising the stomach and intestines, there being a cessation of respiration and pulse for at least two minutes. At this time his blood-pressure was zero, absolutely refusing to register. After the administration of ephedrin and artificial respiration he regained life, but with a rapidly changing heart rhythm, the pulse ranging from 60 to 180 beats per

minute. The anastomosis was rapidly completed notwithstanding his precarious condition.

His immediate post-operative recovery was rapid, and at the end of twenty-four hours milk was given and the amount increased daily; on the fifth day a small amount of semi-solid food was allowed. There was no vomiting or discomfort until the eighth day, when patient began to complain of nausea which was followed by profuse vomiting of bile-colored fluid; this persisted in spite of repeated gastric lavage, intravenous fluids, and a total abstinence from all food and water by mouth. Realizing the probability of a mechanical obstruction, which was verified by the fluoroscope, we again opened his abdomen on September 4, 1929, under novocaine anesthesia. There was an obstruction of the distal fragment of the jejunum and a partial obstruction of the proximal end with considerable distention of this portion of the gut. This condition was attributed to the *contraction* of the stomach plus an improper placing of retention sutures which produced a slight rolling of the small gut. The stomach was freed from the opening in the mesentery and the retention sutures were severed, to be replaced by others which would tend to hold the small bowel in more nearly a normal position. However, this did not produce the desired relief, and consultation with an out-of-town surgeon was held. This consultant advised against further surgery, on account of the patient's age, condition, etc., advising repeated gastric lavage with hot water and a continuation of the daily glucose solution. The x-ray study was most confusing. However, feeling that this was a mechanical probblem we were dealing with, I insisted, and again opened the patient's abdomen, using novocaine anesthesa. There was a recurrence of the obstruction, but only affecting the proximal end of the small bowel. An entero-anastomosis was done by the suture method, with the happy result that all vomiting ceased immediately and the patient made an uneventful recovery. This man has since gained forty-five pounds and is symptom-free.

The nose and mouth should be scrupulously attended to to prevent a possible pneumonia. The anesthetic should be selected according to the patient's general condition, and not infrequently a local anesthetic is indicated.

In handling these cases post-operatively, the first and most important thing to remember is the prevention of pneumonia—and this is especially true after extensive gastric resections. Where an oxygen tent is available, it is most beneficial and should be used. In addition to this, I would advise frequent turning of the patient to prevent hypostatic congestion of the lungs. It is our policy to feed these cases early; milk is given on the second day and increased each day until the fifth day, when a more liberal diet is prescribed. Immediately following the operation, intravenous saline is given, to be followed daily or oftener as indicated by glucose solution. Should vomiting occur, we unhesitatingly resort to gastric lavage and repeat this procedure every few hours. It has been our experience that patients who vomit after three or four days are suffering from some mechanical defect and another laparotomy is indicated, provided there is no other demonstrable reason for this continued vomiting. The following case report will demonstrate the necessity for a most careful study before advising further surgical interference:

CASE IV.—Mr. S., white, admitted to the hospital April 15, 1929.

At this time he gave a history of having been operated upon some time previously at a government hospital for gallbladder disease, when a cholecystectomy was done. There was pain in the epigastrium, coming on immediately after the intake of food Examination revealed a stenosis of the duodenum with a six-hour gastric retention. At this time his blood and urine were negative. Operation was declined. He returned to the hospital on September 2, however, and was given daily gastric lavage until the fifth day, when his abdomen was opened. The entire upper right quadrant was a mass of adhesions, with the duodenum being embedded therein. No attempt was made to free these adhesions, but a posterior gastroenterostomy was done with difficulty, due to the stomach being partially fixed.

His recovery was uneventful for seven days, after which time he began vomiting. Stomach washings regularly, together with fluids intravenously, did not improve his condition; but, on the contrary, he gradually became weaker and his condition more desperate. A fluoroscopic examination was made, but the findings were rather uncertain. His urine had been negative until the 20th, when albumin was present. On the 25th an estimation of non-protein nitrogen showed a marked retention, 285.6 mg. with a creatinin of 2.8 mg., and there was a marked diminution of urine. Hot packs were given regularly, and after two days he began to improve rapidly. This patient left the hospital on October 8, against our advice. He was much improved, how-

ever, and has steadily gained since that time. He is now free from gastric discomfort and his kidney function is normal.

Conclusions.—In conclusion, may I urge upon you:

1. The necessity for teamwork in handling these suspicious ulcer cases.

2. The importance of giving these uncomplicated ulcer patients a chance to regain their health by the proper medicinal treatment.

3. Where surgery is indicated, to select the type of operation best suited to meet the individual requirement, and not subject the patient to some unnecessary, hazardous operative procedure.

4. The great importance of both pre-operative and post-operative care.

Discussion

DR. W. S. FULTON (Wheeling): I do not want Dr. Wilkinson to feel that I could listen to his paper and not congratulate him on its timeliness. The thought that I received was that no man today can practice surgery alone. A man doing general surgery must be associated with a well-trained internist. All ulcers of the stomach or duodenum are primarily medical cases. These cases should all be put to bed and treated as medical cases, and you will be surprised how few of them will come to surgery.

Any operation for the relief of duodenal or gastric ulcer is a serious procedure. We all know the history of the case that Dr. Wilkinson has reported as having operated upon; the surgical tragedies that can happen. I think that doctors become more conservative as the years pass by, and when we check up our records we realize probably how much unnecessary surgery we have done. So the thought that I received from this paper today is *conservatism* and that surgery and medicine must go hand in hand if we are going to give the public what we would ask ourselves.

DR. E. BENNETTE HENSON (Charleston): I am glad the essayist takes the conservative view of the treatment of gastric and duodenal ulcer. For the past five years I have been surgical examiner for the regional office of the Veterans' Bureau, and quite a number of these gastric cases come through my hands that have been operated on by Mayo, Crile, Finny, and others, for duodenal ulcers. It has been my observation that those patients on whom the various types of operation for relief of duodenal ulcer had been instituted are underweight and forced to follow a most strict diet, and their compensation remains the same. On the other hand, those who have been treated medically are usually of normal weight and many times overweight. They are never underweight. Their diet is usually held rather strictly as per instructions of doctors. The x-ray studies showed the medically treated cases and the surgically treated ones to be of about the same appearance. This constant contact with these cases has convinced me that surgery of the stomach should only be considered in the most serious cases and after medical treatment has failed.

DR. R. U. DRINKARD (Wheeling): I thoroughly agree with Dr. Wilkinson that our literature is clogged up with differences of opinion in handling gastric surgical conditions, so that we have to decide for ourselves just what we are to do in each individual case. He mentioned, for instance, tuberculosis as sometimes being mistaken for a peptic ulcer.

I have a secretary at the present time who was in the Army, 1918, Base Hospital, Richmond, Virginia. He had a lot of epigastric pain and a diagnosis was made there of angina pectoris and he was treated for a period of three months. After coming out of the army, he came under my observation and he had a pulmonary lesion. Three or four years later he developed a peptic ulcer of the pylorus. I have always thought that his angina pectoris was probably a peptic ulcer rather than tuberculosis. Soon after I saw him he had signs of obstruction in the upper abdomen, gave history of hunger pain and distress about two hours after eating, and suddenly he developed symptoms of a rather alarming nature. He had twelve hours' retention until we did an exploratory operation and found that he had a pyloric ulcer. At the time of the operation I was quite sure that we were dealing with a carcinoma and did a gastroenterostomy, but he cleared up perfectly for about four years, when he again developed his hunger pain, which was relieved on taking food. Occasionally he had blood in the stools, which were of a tarry nature. The x-ray man made a diagnosis of marginal ulcer. I think that, of all the things we have to deal with, a marginal ulcer is one of the meanest things that we come in contact with in connection with peptic ulcer. About the time he developed this condition, Dr. Cole, of New York, was in Wheeling to read a paper, and got up quite a discussion on the difference between a surgical and a medical condition of peptic ulcer. He advised us never to operate on an ulcer of the stomach unless there was some obstruction of the pyloric end of the stomach. But this man had more or less gastric retention and obstruction, showing a definite mar-

ginal ulcer by x-ray. So we took him to see Dr. Cole and he suggested that we treat him medically. He thought he had a better chance by being treated medically than surgically. Now the man does his work perfectly well. Occasionally he has a pain of slight nature, probably due to what he eats.

DR. WADE H. ST. CLAIR (Bluefield): I would really like to have found something in that paper to jump onto Dr. Wilkinson about, but have to concur in everything he said. There is one thing that he spoke of—repeated gastric lavages just before operation. For some time—two or three years—we have discontinued doing a lavage just before operation. For four or five days just previous to operation we discontinue lavage and give our patients the full amount of food that they are able to take, even on the morning of the operation, and have found that these patients do very much better than those who are prepared by lavage beforehand. With a lot of them, that procedure is about as severe as the operation. We have all quit purging patients for twenty-four hours before operating on them, and I think that stomach lavage is about as bad. If there is anything in the stomach at the time of opreation, as soon as the stomach is opened an aspirator is pushed in and everything aspirated, and we have found that these patients go through the operation very much better than if we made them submit to a lot of preparation. I do not know, but that might possibly have had something to do with Dr. Wilkinson's patient going bad during the operation he mentioned. I wish to congratulate him on his persistence in operating on that patient, and feel sure that some of the rest of us might not have been so courageous.

Post-operative intestinal obstruction should be recognized early. The sooner you realize what you are up against, and go ahead and reoperate, the better chance the patient has, and many will recover. I enjoyed Dr. Wilkinson's paper and thank him for presenting this timely subject.

DR. WILKINSON (*closing the discussion*): In conclusion, there are just one or two points that I wish to bring out: The importance of teamwork between the surgeons and competent medical men in handling these cases; and I might also add competent x-ray men, because I do feel that we are often misled by incorrect findings. Another thing is the importance of carefully studying each case that presents itself with gastric discomfort.

It has been my experience, in goiter patients, that there is a reflex action or some manifestation that we can not describe that will give you definite symptoms, but, when studied with x-ray, do not give evidence of ulcer. Proper attention to thyroid dysfunction will often correct the gastric symptoms.

REMOVAL OF TONSILS BY HIGH-FREQUENCY CURRENTS *

By MATTHEW F. C. ZUBAK, M.D.
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A high-frequency current is an electrical current that alternates or oscillates at an exceedingly high rate.

In 1890, d'Arsonval showed that when a current used to stimulate muscle reversed its direction more than 5,000 times per second, the contraction became feebler in proportion to the increase in frequency of the alternation. About 10,000 alternations, contraction ceased. Current desirable for diathermy—heat in the tissues—must be deprived of its power to stimulate the excitable tissues and to cause chemical (electrolytic) changes by increasing the frequency of its oscillations. The stronger the current, the more frequently must it alternate or oscillate; but when the frequency exceeds a certain critical height, probably not less than 500,000 per second, regardless of the strength of the current, the stimulating and electrolytic powers are lost.

Without entering into too much technicality, the frequency of the oscillations depends on three factors, *viz.*:

1. The resistance of the circuit;
2. The amount of the self-induction in the circuit; and
3. The capacity of the condenser.

Various methods of improving the current have been developed, until now we have a small, compact outfit capable of producing the three types of current to be discussed forthwith.

These types are fulguration, surgical diathermy (electro-coagulation), and the cutting current—the so-called radio knife, or, as called by Kelly, the acusector.

Fulguration.—Fulguration is monopolar, although it can be bipolar; that is, the active electrode may be used alone or in conjunction with an inactive electrode, such as a metal plate placed on a remote part of the body.

We always use fulguration without an inactive electrode. An ordinary sewing needle suffices for

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nearly all work in the throat. A curved or angled needle may similarly be used if the occasion demands.

In fulguration, sparks are directed upon the tissue to be removed. The length of the spark desired is secured by testing it on a piece of soap or on any metallic object. The current is increased or decreased until the distance which the sparks travel is suited to the amount and type of tissue to be destroyed. The sparks are formed by heating the air intervening between the tissue and the needle point to incandescence, the current generating heat by overcoming the resistance of the air. The tissue is rendered hard, dry, and white, and if sparking is continued the white becomes black, the tissue being charred or carbonized.

Some men speak of desiccation of tissue. This may be described as low-grade or mild fulguration, sparking only to the point of dehydration. Desiccated tissue under the microscope shows the cells shrunken and shriveled only, and not destroyed as in carbonization.

Fulguration is used for small tonsil remnants, lymphatic hyperplasia, granular pharyngitis, hyperkeratosis, small new growths of any type, ulcerations, etc. It may be said to be most useful in any pathological change which is more or less superficial, its action being limited to but a short distance from the surface. The carbonization prevents deeper penetration unless continued long enough to so heat the carbonized tissue that it in turn desiccates and then fulgurates beyond its own confines. This much heat is too intense for comfort or safety in the throat, and so tissue of greater depth is destroyed by coagulation.

In fulgurating, one can use short, mild-intensity sparks; then longer and longer sparks, and, finally, may put the needle in contact with the tissue. This method gives the maximum penetration possible and may work on the tongue, mouth, or outside structures especially; but in the throat it is best to adjust the spark to the requisite length, as judged by experience, and to turn on this full amount at once.

Do not touch the skin of the patient, who acts as a ground, with either hand while fulgurating, as sparks arise between you and the patient at the point of contact as well as at the needle point.

Surgical Diathermy.—Diathermic coagulation is the heating of abnormal tissue through and through to a temperature high enough to coagulate or boil tissue fluids.

In diathermic coagulation, the current passes through the tissues of the body from the inactive electrode to the needle, and heat is generated in the part to be destroyed. The needle remains cold until heated by contact with the electrically heated tissue. Electro-coagulation is in no way to be confused with the Paquelin or actual cautery, wherein the cautery is red hot and cools from contact with the tissues. The cautery introduces heat from without and spreads within by conduction. In diathermy, the heat is actually generated in the tissues along the path of the current. The passage of electrical current along any conductor generates heat, the amount and the degree depending on the resistance of the conductor, the intensity of the current, and its duration. The heat is generated in all the parts traversed so that the tissues are heated directly, simultaneously, and throughout, and not localized on the surface as from heat lamps and other agents. If electrodes of one size are used, for example, on the back and on the chest, the maximum heat intensity would be midway between the two. This fact is made use of in medical diathermy. If the electrodes are of different sizes, the maximum heat intensity is nearer the smaller electrode.

To produce surgical diathermy or coagulation of tissue, a temperature of at least 60° C. (140° F.) must be attained. Frequently, 100° C. is reached, the tissue fluids boiling at this temperature. To attain this heat the concentration of the current must be increased by narrowing its path. This is effected by reducing the area of one or both electrodes. If the active electrode is one square centimeter in area and the inactive electrode two hundred square centimeters, the density of this current will be proportionately higher under the small, active electrode. The highest temperature will be in the tissues in contact with the active electrode, and the lowest temperatures under the indifferent electrode. Thus, the tissues in contact with the needle can reach 100° C., while the tissues under the inactive electrode are just warmed. The temperature progressively diminishes as the distance from the smaller electrode is increased, until at a certain depth below it the temperature will be insufficient to coagulate the tissues.

Two active electrodes in contact with the tissue to be destroyed may be used, the current being confined to this tissue and its density or concentration being high throughout its path.

If a disc is used for the active electrode, coagulation begins under the edge of the disc, then proceeds to the center and below the surface and lastly beyond the edge, where it is now visible. At this moment

one hears a hissing sound, due to steam escaping from the tissue boiling under the disc. After this, the noise increases to a crackling because of sparks. These sparks pass from the edge of the disc over the coagulated tissue and around the edge of the disc to the uncoagulated tissue beyond. If the current is continued or increased, the sparks increase in length and whiten the tissue for an increasing distance around the disc. The tissue is without fluid, boiled dry, and now is a non-conductor of electricity. Therefore, this current passes in the form of sparks from the edge of the disc to the better conducting tissues beyond. With the formation of this non-conducting or insulating tissue and the appearance of sparks, further coagulation is now restricted to the surface of the tissue. Continuing the current will not increase the depth of the coagulation below the surface except with extreme slowness. Experimentation has proven that the coagulation spreads under the disc to a depth approximately equal to the diameter of the disc. Slowly increasing the intensity of the current permits deeper coagulation than a rapid increase. Sudden, intense heat dries a layer of tissue and sparks appear before coagulation has extended to a depth equal to the diameter of the disc. One might compare this to the searing of a steak on both sides to retain the tissue juices unchanged between the two seared surfaces.

If a single needle electrode is used, coagulation will commence at the point of the needle and spread upwards around its shaft until it reaches the surface. This is indicated by whitening of the tissues surrounding the needle and by the production of a bubbling sound. If the current is now stopped and the needle withdrawn, the coagulated mass is found to be cylindrical in form and surrounds the needle like a sheath. If the current is allowed to flow longer, scarcely any further spread of the coagulation beyond the point or sides of the needle occurs. The reason for this is the drying of the tissue in contact with the needle and its conversion into an insulating sheath. Just as the coagulation starts at the point and proceeds up the shaft to the surface of the tissue, the drying begins in the same region and follows the same direction. If the needle remains in position until the tissue surrounding it is dry and is then withdrawn, it will bring with it portions of tissue adherent to its surface. If, however, the needle is withdrawn as soon as the white area appears around it, and just before the bubbling begins (that is, when the tissue surrounding the needle is coagulating and before it is dry), the needle will come away clean and bring no tissue with it.

For tonsil work, we use for the active electrode a needle bent at a right angle, the short arm of which is one-fourth inch long. For the inactive electrode a plate of block tin, about eight by ten inches, is placed in contact with the patient's back. This requires no removal of clothing in women and the mere unfastening of the collar in men.

It is just stated that the rate of increase of the current influences the extent of the coagulation when disc electrodes are used. The same is true when a single needle electrode is used; but the influence of the rate of increase is very much less. The area of contact of tissue and needle is small and, therefore, the current is concentrated, producing rapid coagulation and drying. It is better to withdraw the needle and to insert it in a second place than to prolong the effect in the first place, thereby lessening the amount of heat and reaction and obtaining equal effect. It is well to bear in mind that diathermy is never anything but heat. If the needle be kept in place and the current continued beyond the initial coagulation effect desired and produced, sparks will fly from the point and sides of the needle through the dried sheath and will char it. The tissue beyond the charred area will in turn be coagulated for a very slight additional distance because of the heat conduction. It is possible, in turn, to char this last coagulated tissue and to coagulate still farther away from the needle; but the price exacted in discomfort, due to this long-continued, increasing heat, would not be commensurate with the results obtained, as compared with two or more needle punctures separately introduced.

If raw beef is coagulated experimentally with various-shaped electrodes, it is seen that the tissue destroyed is influenced by the size and shape of the electrode. In working upon living tissue, two additional factors must be considered, *viz.*, the movement of the blood and the degree of moisture of the tissues. The circulating blood, by convection, removes some of the heat and limits the coagulation to an area less than in the raw beef. However, it is to be remembered that it is possible to devitalize living tissue by heating it to a degree insufficient to coagulate its protoplasm. From this factor it is seen that tissue cells are destroyed for a little distance beyond the visible coagulation. Histological study of coagulated tonsil tissue discloses four distinct zones:

1. Coagulated dried tissue in contact with the needle.

2. Coagulated but not dried tissue, with the cells destroyed and the blood vessels coagulated.

3. Coagulated cells and walls of the blood vessels, but the blood not coagulated.

4. Desiccated or dehydrated cells, but no coagulation.

The depth of destruction is limited by the depth of insertion of the needle, and the lateral extent of the destruction is not more than three millimeters from the shaft. Continuing the current after the white zone is seen to appear on the surface of the tonsil will cause coagulation to extend but very slightly beyond the point and beyond the initial lateral limits.

The coagulated tissue forms a slough which slowly separates from the healthy surrounding tissue piecemeal and requires five to ten days for its entire disappearance when the needle punctures are routinely one-fourth inch deep and are made over the entire free surface of the tonsil at each séance. If the patient is seen at weekly intervals and each tonsil is treated alternately, no slough is encountered when the succeeding treatment is due. If the treatments are at longer intervals, it is seen that granulation tissue has replaced the destroyed tonsil tissue and filled the cavity left by the evicted slough. These granulations are covered by epithelium, and, if left undisturbed, are converted into scar tissue which does not contract nor form adhesions with the parts with which it may be in contact.

Cutting Current.—The third type of current available on the machine used by me (Wappler) is produced by using the undamped oscillations, contrary to the currents previously mentioned. In some makes, the radio tube is used to modify the current to the correct modality, and I believe that it is from this that the term "radio knife" originated. By the use of this current, neither fulguration nor coagulation are observed; but, rather, a disintegration of tissue. Some slight coagulating effect is deliberately added by some manufacturers and is a desirable combination, as will be explained presently.

If the knob is turned to the cutting designation, the switch turned on, and the spark gap widened, a shower of sparks passes from the needle point to the testing material, such as a bar of soap or a piece of beef. Narrowing the spark gap causes the sparks to pass without apparent intermission and gives the appearance of an arc. This minute arc or film of incandescent air formed between the needle point and the tissue to be destroyed is used to separate the tissue into two as though cut with a knife. The needle does not touch or affect the tissue, but merely guides the arc in the location desired. The tissue is seen to whiten, and cleaves apart in advance of the needle. The amount of whitening depends upon the amount of coagulating effect which has been added, and this coagulation extends from one-tenth to one millimeter from the surfaces. This is ample to seal the minute blood and lymph vessels, and no bleeding is encountered unless one cuts across what is called a spurter. Even these are readily controlled by grasping the bleeding tissue with a hemostat and applying the needle to the hemostat. The heat is now directed along the hemostat and the tissue coagulated by this conveyed heat.

The speed of the needle movement determines the amount of coagulating effect produced in the cut surfaces. If it is too slow, charring or carbonization occurs; if it is too rapid, the arc is extinguished and now resistance is felt to the passage of the needle through the tissue. When timed properly, there is no sensation of resistance and the needle does not touch the tissue.

In describing electro-coagulation, it was stated that the tissues were heated up to the boiling point. The cutting current employs an intensely high temperature in its arc or shower of sparks and dries the tissue proteins and coagulates them simultaneously and instantaneously.

What has been said of the needle applies equally to a wire snare with the same current connected to the handle of the snare.

TECHNIQUE

Fulguration.—For the destruction of small tonsil stubs, lymphatic hyperplasia, ulcers, etc., the tissue is painted four or five times, at two-minute intervals, by means of a swab wrung out of a ten per cent cocaine solution. A straight or curved needle, insulated by rubber tubing to within an eighth of an inch from the tip and help in a hard rubber or vulcanite handle, is used. The length of the sparks is adjusted to the required length and intensity by testing on a cake of soap or some metallic surface. The instructions given with the apparatus need to be varied but a trifle. Sparks approximately one-fourth inch long and in a fine shower seem to work the best in throat work. Being careful not to touch the patient's skin with either hand, the needle point is held one-fourth inch from the tissue, the foot switch is depressed, and as the sparks commence to flow the needle is brought closer and closer until it is just in contact with the tissue, provided it is seen that the tissue has not been destroyed completely

before this contact is made. This procedure requires but two or three seconds, and if the patient is well behaved two or more areas can be destroyed before withdrawing the needle from the mouth. This procedure is repeated until all is accomplished that is desired or thought sufficient for one séance. This is determined by experience, the nature of the diseased tissue, tolerance of the patient, and the amount of time required to complete the work.

It is well to work first on one side of the throat, next on the other side, and, lastly, in the center; or this order may be reversed. It is unwise, for example, to fulgurate the entire width of the posterior pharyngeal wall at one sitting. No after-care is necessary other than what would be prescribed for ordinary comfort or asepsis.

Coagulation.—By this means one endeavors to destroy the average-sized adult tonsil in four or five sittings. If this is borne in mind, one can plot out with fair exactness how much is to be done each time.

A metal plate or piece of blocked tin, eight by ten inches, is attached to the cable from the indifferent terminal and is placed by the office nurse in contact with the skin of the patient's back. A pillow may be used between the patient and the back of the chair, or the patient sits erect so that good contact is made between the plate and his skin. An ordinary throat applicator is wrapped with cotton, dipped into ten per cent cocaine, and squeezed until there is no dripping. This is then applied to the free surfaces of the tonsil and of the pillars, four or five times, at two-minute intervals. It is not necessary to anesthetize the posterior pharyngeal wall, tongue or cheeks, as is sometimes advocated. The patient is told what is being done and is advised that he will have the feeling as though he had swallowed a ball of cotton. If this admonition is not given, many patients will attempt to expectorate what seems to them a foreign body, and will hawk and gag to the point of vomiting in an effort to relieve this feeling.

The curved needle is placed in the handle and insulated to the knee by means of narrow rubber tubing. The only testing of the current necessary is to try the foot switch and to judge, by the sound, the strength of the current being applied at that moment. The current varies at different times of the day, and minor adjustments may have to be made several times during the day. The machine can be shorted and a reading of 2,500 on the ammeter may be adopted as a safe starting point. This reading in no way indicates exactly how much current passes through the tissue of any particular patient, but will be safe in practically all cases. One becomes accustomed to the proper sound by very few experiences, and will rely upon that and the correct major setting of the dial of the machine. Tongue depressors and pillar retractors of non-conducting materials can be used; but if the operator is careful not to allow the needle to come in contact with these other instruments, no harm can result. For the first two or three treatments, on most tonsils, no pillar retractor is required unless the tonsils are so embedded that no free surface is presented in the pharynx upon inspection.

The superior pole being most difficult of destruction, because of its hoodlike covering, it is attacked first. With the tongue depressed by one hand, the needle is inserted into tonsil substance to a depth of one-fourth inch, which is the length of the short arm and the limit of exposed needle. Current is activated by the foot switch and continued for one-half to two seconds, by which time a white area appears around the shaft at the surface of the tonsil. The current is stopped immediately upon the appearance of this white area and the needle is withdrawn. It is best for the beginner to make this initial puncture in the center of the tonsil, so that if the current is not correct or the patient refractory, no harm can be done. Were something to go wrong while working on the superior pole, there would be more danger of injuring muscle than there would be lower down on the tonsil.

It is good psychology to rest after this initial puncture and to inform the patient that the day's treatment will consist of six to eight such punctures. This serves to allay the apprehension normal to most of us whenever any new procedure is tried, and particularly so when electricity is used. All patients seem surprised that there is no more sensation, regardless of how you explain in advance of the actual doing. "The proof of the pudding is in the eating" holds true for this as well as for other trials.

The second puncture is made adjoining the first at a distance calculated to permit its white area to approximate the white area of the first puncture. Bearing in mind what has been said previously regarding devitalized tissue beyond the actual coagulation, a small bridge of tissue is allowed to remain between the white areas. This can be likened to the formation of wheals in injecting novocain for regional anesthesia, with the exception that we do

not allow these areas to touch, let alone overlap. To cover the exposed surface of the tonsil in each séance is the aim of the deliberate placing of the punctures. This causes the tonsil to decrease in depth over its entire extent. It is as though one were digging a well. It would be folly to dig to the utmost depth in the center rather than to dig the entire diameter until the requisite depth is reached. In other words, we are removing the tonsil by layers rather than by sections. Of course, the tonsil is not of uniform thickness throughout, and thu ene region will be completed whereas adjoining it some tissue will remain to be destroyed.

It has been my experience that, if the white area surrounding the needle does not touch the muscle of the pillars, there is a minimum of pain in the doing and post-operatively. The last one or two treatments especially are to be cautiously given, as there is more danger of heating muscle.

The crypts of the tonsil extend to the muscle aponeurosis, and, as in eradicating a mastoid cavity, when no more partitions are seen, one must be at the bottom, so here, when no crypt walls are seen, one must be at the bottom. If you can visualize a wooden egg-crate with cardboard partitions, this can graphically represent the tonsil bed and its contents. Destroying the cardboard contents of the egg-crate without injuring the wood is equivalent to removing the tonsil without injuring the muscles surrounding it.

This brings to mind a factor of safety learned from experience and not mentioned in the literature. The heat required to destroy lymphoid tissue will not destroy muscle tissue. This presupposes that the needle is withdrawn immediately upon the appearance of the white area surrounding it and prior to the formation of bubbles.

The plicæ of the tonsil offer the most difficulty, and, in doing coagulation, more is learned of the plicæ than you would think existed. The inferior or triangular or infratonsillar plica offers the most difficulty. In most cases the tonsil dips down below the upper margin of this hammocklike sling between the two pillars, and it is necessary to sever deliberately enough of its fibres by means of a vertical incision with a needle to be able to reach the inferior pole of the tonsil, on a direct visual line. This avoids small retention pockets which might remain after the remainder of the tonsil has been destroyed. In other cases, the inferior plica is but a narrow, attenuated band which offers no interference to access to the tonsil. What has been said of the inferior plica is true also of the superior plica, but to a lesser degree.

To return to the first treatment of the tonsil, after the entire free surface is covered with coagulated areas, acriviolet, in the form of a powder or solution, is applied and the patient is dismissed. He is advised to place empirin compound powder on his tongue before each meal and at bedtime for the first twenty-four hours and as long thereafter as he may have discomfort.

Cutting Current.—The cutting current is used both with the needle and with the snare. In doing a local tonsillectomy, the insulated snare with the cutting current connected is used in place of the cold snare. This has been found by experience to decrease the post-operative discomfort and to minimize the bleeding attending the usual operation under local anesthesia. The only modification of the usual technique is to synchronize the shortening of the loop with the activation of the current by means of the foot switch. I have had no experience with electrical methods under general anesthesia.

In the second method of using the cutting current, the needle is used in place of the sharp knife and dissector, either dull or sharp. The new technique suggested by Fowler in his masterly monograph, "Tonsil Surgery," recently published, can be modified with improvement by using the cutting current, "radio knife," for all the incising and dissecting. The radio snare is used to replace the cold snare advocated by Fowler, to complete the removal of the tonsil after it has been dissected from its superior pole down to the base.

The use of the cutting current for this modification of Fowler's tonsillectomy removes bleeding and septic absorption from the picture. The post-operative discomfort is markedly decreased, as can be readily learned by removing one tonsil with the aid of the cutting current and the other without.

The public demand for a safe, non-incapacitating tonsillectomy can not be denied. The criticisms of men inexperienced or ignorant of all the facts are found wanting when balanced against the enthusiastic endorsements of men such as Dillinger in America and Dan MacKenzie in Great Britain. Their favorable opinions are based not on seven cases miserably handled, but on hundreds of cases intelligently treated to successful completion. My own cases number three hundred exactly.

Again, "the proof of the pudding is in the eating." If, by my humble efforts, I have removed some of the uncertainties, doubts, fears, and suspicions that

may have lurked within you, I shall feel amply rewarded.

SUMMARY

Three modalities of high-frequency currents are offered by manufacturers in compact outfits.

Patients unable or unwilling to undergo hospitalization and routine general or local tonsillectomies can be offered successful alternatives.

Despite contrary opinions in the literature, the removal of tonsils by high-frequency currents can and is being done successfully all over the universe.

Conclusions.—1. Fulguration is used for the removal of shallow growths or small amounts of diseased tonsil tissue.

2. Surgical diathermy or electro-coagulation removes tonsils by repeated treatments with minimum risk.

3. Cutting current (radio knife—arc cutting) is used in needle and snare replacing scalpel and cold snare in usual local tonsillectomy or in modification of new tonsil technique proposed by Fowler.

ACUTE CRANIO-CEREBRAL INJURIES WITH SPECIAL REFERENCE TO DIAGNOSIS AND TREATMENT *

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It is not always possible to make a diagnosis clinically of the pathological condition present in a severe injury of the brain, without a direct inspection or examination of the brain at operation or autopsy. For that reason the clinical classifications are usually not based on the pathological findings except in a few cases, but rather on those conditions which are benefited by treatment. It is not possible to restore the brain tissue that has been lost in a severe contusion or laceration of the brain, but it is believed that further destruction of injured brain may be prevented by the relief of any pressure that may occur.

Before entering a general discussion of the subject, one should say something about the associated injuries of the overlying structures. A laceration of the scalp is frequently present, and its treatment should not be passed by too lightly. Its importance rests chiefly on the fact that it is an open wound and bacteria are deposited in it and may become infected. Infection of the scalp, with or without an underlying fracture of the skull, may become serious. There may result serious complications, such as erysipelas of the scalp and face, septicemia, osteomyelitis of the skull, meningitis, or even brain abscess. All of these complications have been observed following an infection of a simple laceration of the scalp.

I do not think that all lacerations of the scalp can be prevented from becoming infected. One can not do aseptic surgery without an occasional infection. By proper precautions, however, a large number of these infections can be prevented. Most of the lacerations are made by blunt objects striking the head, or the head hitting the pavement. The edges of the wound are contused, with tags of devitalized tissue whose nourishment is vitally impaired. Usually there are some foreign materials in the wound, all of which predispose to infection. The proper treatment of this kind of wound is excision of the ragged, contused edges well into the healthy scalp, using a sharp knife and local anesthesia. This leaves an incised wound with clean edges, which, when sutured, usually heals by primary union. If the patient is in shock, this treatment of the laceration should be postponed until he has recovered, which usually requires from four to six hours. As a general rule, the wound should be treated during the first sixteen hours if possible; but, on rare occasions, we have excised them at the end of twenty-four hours or more when it was necessary to do some operative work on the underlying structures.

There are two types of fracture of the skull that are of importance from a surgical standpoint. They are compound and depressed fractures. In compound fractures the indication for operation is to prevent infection. This requires a debridement of the wound with removal of all foreign material and devitalized tissue, together with judicious use of antisepsis and asepsis. If these is hair or other foreign material in the line of fracture, an opening should be made with a drill near the fracture and the edges of the bone rongeured away.

Depressed fractures usually have contused or lacerated brain lying immediately underneath. In the case of a compound depressed fracture there may be pieces of lacerated brain tissue passing through a tear in the dura and appearing in the wound. It is very important to operate on these cases early to prevent infection. The scalp edges should be excised, depressed fragments of bone elevated or removed, and blood clots and devitalized brain tissue irrigated away with normal saline. Bleeding from the brain tissue can be controlled with temporary moist cotton packs or muscle grafts. The dura

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should be sutured tightly if possible, and it is best not to use drainage. The depressed fragments of bone may be preserved or replaced to repair the cranial defect in certain selected cases, but this is not always recommended in these compound wounds.

In the simple depressed fractures the time for operation will depend upon the patient's general condition, but as a rule it should be done the first few days if possible. It is believed that the greatest damage is done to the brain at the time the fracture is received. The continued pressure on the injured brain caused by the depression may add insult to injury, and this, together with the relief of deformity, constitutes the indication for operation. It is possible that we overemphasize the importance of operating on slightly depressed fractures. If the depression is over a venous sinus and there is probably no brain tissue being pressed upon, it had best be left alone rather than start up a severe or uncontrollable hemorrhage.

Linear fractures of the vault are of importance because they give information as to the location and severity of the blow. Fractures of the base of the skull are not dangerous within themselves, except that they are liable to admit infection in the cranial cavity through the middle ear or nasal accessory sinuses. In such cases one will find bleeding from the ear or nose, and frequently a discharge of cerebrospinal fluid.

One of the most serious complications which may occur with a fracture of the skull is an extradural hemorrhage. This condition is nearly always associated with a fracture, either linear or comminuted, in the temporal region. The middle meningeal artery, or one of its branches which lies in this region, is lacerated by the sharp edge of bone. The hemorrhage occurs extradurally. As the bleeding increases, clotting takes place between the dura and bone and compresses the brain. Usually, these clots, which may measure as much as six or eight ounces, are located in the posterior temporal region, showing that the posterior branch of the middle meningeal artery is more frequently lacerated than the anterior. Occasionally, an extradural clot may form from a rupture of a venous sinus. This, however, is rare, inasmuch as the pressure in a venous sinus is low. As a rule, an extradural hemorrhage means that the blood has come from a rupture of the middle meningeal artery. In order to make a diagnosis, the hemorrhage must be large enough to produce symptoms and signs, usually those of compression of the brain.

It is usually seen in adult and middle age, and less frequently in the young or old. In the latter two extremes the dura is more firmly adherent to the skull and the pressure of the bleeding vessel may not be sufficient to separate it from the bone. Short falls and pitched baseballs striking the patient in the temporal region are the most frequent causes.

The usual history obtained is that the patient received a blow on the head and was dazed or rendered unconscious for only a few minutes. This was followed by a free interval of consciousness lasting probably a couple of hours, when he again becomes stuporous or unconscious. This history of the "lucid or free interval" nearly always means a traumatic intracranial hemorrhage. However, there should be other signs present before a positive diagnosis is made.

There will be severe headache during the period of consciousness as the dura is being stripped from the bone. As the intracranial pressure increases, there will be vomiting, slowing of the pulse rate to 50 or probably 40, stupor and an elevation of the systolic blood-pressure, should the intracranial pressure become very high. This elevation of the blood-pressure is a less frequent finding than a slowing of the pulse rate, which is fairly constant. Cushing[1] showed, in his experiments with intracranial pressure, that when the intracranial pressure exceeds the blood-pressure, the latter is raised to prevent anemia of the medulla. So, probably the reason that the blood-pressure is not elevated more in a large number of these cases is due to the fact that the intracranial pressure had not become as high as the blood-pressure and the medullary centers did not suffer from anemia.

Another very important sign is a dilated and fixed pupil on the same side as the hemorrhage. It is one of the most important localizing signs, and appears fairly early. It is not clearly understood whether it is due to a sympathetic stimulation or a third-nerve paralysis. I am inclined to think that it is due to a third-nerve paralysis, because it is a dilated and fixed pupil and frequently associated with ptosis of the upper lid and paralysis of some of the extraocular muscles.[2]

There may be no other focal signs, especially in the early stages. Later on, as the clot increases in size and as the pressure involves the motor area, there frequently is some paralysis on the opposite side. If the hemorrhage occurs on the left side in a right-handed individual, there will be some aphasia before the patient loses consciousness. In our series

of cases of extradural hemorrhage, hemiplegia was a rare finding. It is not infrequent to find extradural hemorrhage associated with a severe brain injury. A blow may have been delivered to the right temporal or parietal region, producing a fracture of the skull with laceration of the middle meningeal artery on the same side, as the direct effect of the injury, and a severe laceration of the brain on the opposite side from contrecoup injury. In such a case the laceration of the brain on the left would probably cause some right-sided paralysis, and the fracture with the rupture of the middle meningeal artery, an extradural hemorrhage on the right, causing a dilated pupil on this side. In such a case one may be at a loss to know on which side to operate—whether to operate on the left side because of the hemiplegia on the right, or on the right side because of the dilated pupil. As a general rule, it is better to follow the dilated pupil in making the decision on which side to operate. An exploratory puncture on both sides may be necessary before the diagnosis is cleared up.

The only treatment of extradural hemorrhage is operation for removal of the clot and ligation or control of the bleeding vessel. An incision is made in the temporal region as for a subtemporal decompression, with an area of bone removed sufficiently large to explore adequately for the bleeding points. When the bleeding vessel is found, it should be ligated or controlled with muscle grafts. A rubber tissue drain should be used for twenty-four hours. It is best not to pack the wound to stop the bleeding, if possible, as the packing itself may cause some compression. Our cases that required packing had a more stormy convalescence than those which did not. There have been seventeen cases of extradural hemorrhage under my observation,[3] sixteen of which were operated on, and three died. One died before operation could be performed, and the diagnosis was confirmed at autopsy.

It is usually stated that the mildest form of brain injury is concussion. The immediate unconsciousness or the dazed state is thought to be due to concussion, resulting from a shaking-up or commotion of the brain and producing a temporary cessation or impairment of function without pathological findings. More recently we have obtained further information through the work of Martland[4] and others, and our understanding of concussion has been somewhat modified. If a blow is delivered to the head, there is an inbending of the skull at the site of the impact, with a sudden rise of intracranial pressure. Frequently the brain is thrown violently against the opposite side of the skull, resulting in contusion or laceration of the brain by contrecoup injury. It has been shown at autopsy that a brain may not show any gross injury to the naked eye, but that microscopic examination will reveal numerous perivascular hemorrhages deep in the brain and about the basal ganglia. Martland suggested that the blow to the head, suddenly raising the intracranial pressure, forced the cerebrospinal fluid at certain points under great pressure in the sulci and perivascular spaces so that the neuroglial attachments are broken loose from the vessels at certain points, allowing a small hemorrhage to form. These patients may have a period of consciousness soon after the injury and later become unconscious and die a day or two later. We may assume that there are mild degrees of the same type of injury and the patient may make an immediate recovery. A fracture of the skull is not always present; in fact, it is usually absent in the most serious cases. The fact that the x-ray does not show a fracture, the patient may be allowed to get up and go to work too early, even though there are symptoms present. They are frequently forced to quit work because of such symptoms as headache, dizziness, fatigability, fainting attacks, personality changes and memory defects. Neurological examinations frequently show negative objective findings. They are brought before the industrial commissions, and the medical profession is called on to determine whether or not the patient is malingering or is disabled from the effects of a head injury.

There is another large class of brain injuries which are usually recognized as contusions and lacerations of the brain, and frequently associated with it is a certain amount of diffuse or localized hemorrhage over the surface. These cases are very apt to develop an increase in the intracranial pressure during the first few days. It is sometimes difficult to tell whether the increase in pressure is due to hemorrhage or edema, or both. As a rule, the pressure from a hemorrhage will come on early, during the first twenty-four hours, while that from edema may not reach its maximum for several days. Focal signs, such as mono- and hemiplegias, or aphasia, may be present, and it will be difficult to tell whether there is a clot or simply a contusion or laceration of that particular part of the brain. If it can not be determined otherwise, it is better to make an exploratory puncture under local anesthesia to rule out a hemorrhage.

LeCount and Apfelbach,[5] in a study of 504 cases at autopsy, reported on the findings of the greatest brain damage as compared with the location of the fracture of the skull. When the blow or the fracture was in the occipital region, the greatest brain damage was at the tips of the frontal lobes in 83% of the cases. With the fracture in the temporal region, the greatest brain damage was on the opposite side in 62% of the cases, and with the fracture in the frontal region the most brain damage was in the occipital in 25%. This shows that frequently the greatest brain damage is by contrecoup injury and on the opposite side to which the blow was delivered. In 95% of the cases there was diffuse bleeding in the subarachnoid spaces.

The management of these brain injuries consists in keeping the patient at rest in bed, general observation, and judicious use of measures to offset any increase in intracranial pressure. As soon as the patient has recovered from shock, as shown by the temperature, pulse, and blood-pressure, the head is placed in an elevated position. This position lessens the venous congestion. An ice-cap may be applied to the head to relieve the headache and make the patient more comfortable. Bleeding from the ears or nose should not be interfered with by packing, unless it becomes alarming because of the loss of blood. The external ear should be cleansed with alcohol and a sterile gauze dressing applied. X-ray and special examinations are made as soon as the patient has sufficiently recovered from shock to be moved. If the patient is unconscious, or if there are signs of increasing intracranial pressure, a spinal puncture may be done to determine the pressure and character of the fluid. A uniformly bloody fluid suggests some bleeding in the subarachnoid space and probably a contusion or laceration of the brain.

Further observations are made for signs and symptoms of increasing intracranial pressure. These symptoms are the same as those produced by intracranial pressure from any cause, and have already been described in connection with extradural hemorrhage. The symptoms of pressure from edema, however, are usually not so rapid in onset and may be drawn out over several days before reaching the maximum. There frequently is no rise in the systolic blood-pressure, unless the intracranial pressure becomes very high; but there is very often a rise in the pulse pressure. We have made it a rule for every patient admitted to the hospital with a head injury to have the nurse or interne record the pulse and respiration every half-hour and the blood-pressure every hour for the first day or two, or as long as the condition is in doubt. The purpose of this is to obtain information, as early as possible, of any sudden increase of pressure, as from an intracranial hemorrhage, in order that the patient may be operated upon before he becomes unconscious or his respirations cease.

The treatment for relief of increased intracranial pressure is accomplished by dehydrating measures, spinal punctures, a subtemporal decompression, or a combination of the three. Since the use of hypertonic solutions, dehydrating methods and spinal punctures, we have seldom had to make use of a subtemporal decompression. However, if the dehydration and spinal punctures are not relieving the pressure, or the pressure is increasing, it is better to do a decompression. The decompression should be done on the right side in a right-handed individual unless there should be focal signs pointing to the left side, or an intracranial hemorrhage is suspected, when it should be done on the side of the local compression.

The dehydrating treatment is carried out by restricting the fluid intake to as small an amount as may seem expedient for the patient. Frequently a pint or less may be the limit for each twenty-four-hour period, without any discomfort. At the same time, intravenous injections of 50% glucose (40 to 60 c.c.) may be given two or three times a day if necessary. Other hypertonic solutions may be used if preferred. Hypertonic sodium chloride has been used, but it has been found to be more toxic than glucose, and the latter has replaced it. Magnesium sulphate in one ounce or one-and-a-half-ounce doses is given by mouth every day or two (or through a nasal tube if the patient is unconscious), provided it does not cause too much purgation. It should be stated that if the patient is in shock, or if the general condition is weak, with a rapid pulse, this dehydration should not be used. During the period of shock the fluid intake should be increased, using hypoclysis of normal saline sometimes, and, frequently, intravenous glucose solution. As soon as the symptoms of shock have disappeared, the dehydration treatment may be instituted to offset the edema and rise of pressure.

As stated before, spinal punctures are done to measure the pressure and to relieve it by withdrawal of fluid. It may be done once or twice daily, as indicated. The danger of spinal punctures in head injuries has probably been overestimated by certain writers. The only cases in which it seemed to do

harm were those with extradural hemorrhage. The harmful effects were manifested by a slowing of the respirations and an increasing stupor, but, fortunately, they were operated upon promptly, with relief of the condition. I would not recommend spinal puncture in a suspected case of extradural hemorrhage unless one is prepared to give artificial respiration and the operating room can be set up quickly to do an emergency operation. With this exception, I believe there is very little danger in doing a spinal puncture, provided the intracranial pressure is not exceedingly high. It is probably the best mechanical means of removing diffuse blood from the subarachnoid space. Bagley[6] has shown experimentally that, by the injection of blood in the subarachnoid space in dogs, a fibrosis occurs in the arachnoid villi over the cerebral cortex, thereby interfering with the absorption of the cerebrospinal fluid. This causes a back-pressure in the spinal fluid system, resulting in an external hydrocephalus, cerebral atrophy, and, frequently, a dilatation of the ventricles. Therefore, every effort should be made to remove this free blood in the subarachnoid space by lumbar drainage, or by operation, if it is localized over the cortex.

There are some cases in which the patients will die in spite of everything that can be done for them. They are the ones showing massive brain injury, and they usually die during the first few hours after the injury. The blood-pressure may be high, the pulse rate slow for only a few minutes and the patient in deep coma with stertorous respirations, which are probably the effects of a fulminating massive intracranial hemorrhage. This picture rapidly changes to that of medullary failure and death. Operation in such a case, of course, is of no avail. Occasionally there are some localizing signs and one is forced into an operation, expecting to find an extradural hemorrhage. If a hemorrhage were localized and could be removed, then the operation should be justified.

503 Professional Bldg.

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THE IRRITABLE COLON *

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It seems that unless a disturbance of the human organism is raised to the dignity of an organic lesion it receives but little attention by a great many practitioners of medicine. Undoubtedly this may be explained in part by the fact that the present methods of teaching in the medical schools deal largely with organic changes and very little time is devoted to a study of functional disorders. This is unfortunate, because, with the more exact methods of diagnosis and a better understanding of physiology, we are beginning to realize that functional disturbances account for a considerable number of ills to which mankind is subject. Another reason for this neglect is that there is too much haste in the usual office visit and not enough time is given to obtain a careful history. Too often the busy physician allows the patient to influence his opinion and the complaints are not analyzed fully. Or the physician listens to a number of apparently unrelated symptoms and immediately classifies the individual as a neurasthenic and thereby relieves his mind of a problem to be solved. In many instances these persons consult one physician and then another until one listens more attentively to the story and obtains a few leading points that later lead to a proper diagnosis.

Of all the organs of the body that are subject to functional disturbances, perhaps none surpass the colon. On the other hand, the colon lends itself more readily to diagnoses of its disorders. The aim of this paper is to review a very common functional disturbance of the colon because of its frequent occurrence and because it is commonly overlooked or mistaken for organic lesions. The condition to which I refer is called by many names—simple colitis, neurogenic colitis, mucous colitis, and the irritable colon. The latter designation describes the affection more nearly than all the others. Time and space do not permit a discussion of the other functional disturbances, nor of the various organic colitides.

The syndrome of the irritable colon is characterized by an instability of function of the colon in the absence of an organic change in that organ. However, this condition must be distinguished from the organic colitides, and it should be borne in mind that an irritable colon may develop into an organic

* Read before the Section on Internal Medicine of the West Virginia State Medical Association at White Sulphur Springs, May 21, 1930.

lesion. Also, remember that any organic change is practically always accompanied by a more or less degree of irritability.

Incidence.—In a review of 2,500 case histories, Kantor[1] shows that colonic irritability occurred in two hundred cases per thousand. Jordan, of the Lahey clinic, states that three out of every ten patients coming to the clinic have disturbed colonic function. In another communication, Kantor and Segal[2] state that fifty per cent or more of all patients complaining of digestive disorders show evidence of colitis, irrespective of what other conditions may coexist. In my own practice, although the number of patients is smaller in comparison, the incidence of irritable colon has been well over fifty per cent in those complaining of gastrointestinal disturbances.

Etiology.—Many factors enter into the production of an irritable colon. Perhaps the chief one is an imbalance of the autonomic nervous system. This has been described in detail by Eppinger and Hess under the title of vagatonia, sympathicotonia, and combinations of the two. Other authors use the terms *spasmophilia* and *endocrine imbalance* to express the same thing. Bocus, Blank, and Williamson,[3] in a study of fifty cases of neurogenic colitis, concluded that it is due to an underlying basic instability of the vegetative nervous system, involving, in most instances, overactivity of both the parasympathetics and the sympathetics. The former picture is usually the more pronounced. Unquestionably, the abuse of cathartics, enemas and irrigations tend ultimately to result in colitis. Constipation in its various forms may lead to colitis, although quite frequently it is the result rather than the cause. Organic lesions of the colon, gallbladder disease, achlorhydria, appendicitis, improper diet, pericolitis due to extraintestinal irritation and remote lesions outside the digestive tract by reflex action on the autonomic nervous system, all play a rôle in the production of the symptom complex. Finally, focal infection and allergy may be responsible for the production of an irritable colonic state.

Symptoms.—The symptoms are so bizarre that many errors of diagnosis are common. Naturally, there are many degrees of irritability. In the very mild cases, especially if the person is hyperesthetic, it is difficult to decide whether or not this is normal. In the more severe grades, designated mucous colitis, a large amount of mucus is present in the stools. However, the presence of mucus frequently depends upon the segment of the colon involved. For purpose of clarity, the symptoms may be divided into three main groups: those referable to the nervous system, the gastrointestinal tract, and the cardiovascular system. The people presenting the nervous symptoms are usually of a hypersensitive, impressionalistic nature. There is evidence of emotional instability, depression, exhaustion, and introspection. Thus we readily perceive why so many are designated as psychoneurotic and why so few are benefited by such a diagnosis. The gastrointestinal symptoms are very protean. Constipation is one of the most frequent complaints. However, when eliciting the presence of constipation, one must be careful, because very often the patient will state that the bowels are regular when in reality the regularity is an artificial one maintained by frequent catharsis. The feces are usually hard and dry, and thereby cause considerable straining at stool. In some instances there is alternating constipation and diarrhea. As stated previously, the presence of mucus may be the chief complaint. Other symptoms encountered are an accumulation of gas and feeling of fullness after eating, indefinite pains in the epigastrium after eating, exhaustion, easy fatigue, headache, "autointoxication," and "biliousness." Nearly every patient complains of spasmodic pains along the course of the colon at some time or other. These pains may localize in the region of the cecum, the hepatic flexure, the splenic flexure, or in the epigastrium. The cardiac symptoms vary from mild distress and vague pains in the precordia after eating to severe palpitation, shortness of breath, cardiac irregularities, and marked pain over the heart. In these instances a careful history is indispensable for a proper evaluation of the symptoms. When colitis is associated with other conditions, the symptoms of the irritability are frequently overlooked, and even when present alone it is often unrecognized.

Diagnosis.—The first and most important step in arriving at a correct diagnosis is the taking of a very careful history. This can not be overemphasized, especially when the problem of differential diagnosis presents itself. I am certain that if the physician will spend more time obtaining a history there will be fewer diagnostic errors and many patients will be spared a needless laparotomy for the removal of an innocent appendix or gallbladder. The physical examination helps but little, except to rule out other possibilities as a cause of the complaints. There may be tenderness along the course of the colon or localized tenderness in certain areas. Localized tenderness in the right iliac fossa or in the right hypochondrium may be very misleading. Procto-

sigmoidoscopic examination will usually rule out organic changes and it is a useful aid in diagnosis. The findings vary from a mere congestion of the mucosa with free mucus in the lumen of the colon to small punctate hemorrhages and ulcerations. The presence of spasm upon inserting the instrument is a very helpful hint to the diagnosis. The test meal may determine the presence of an achilia or a hypochlorhydria and it is an aid in differential diagnosis. Examination of the feces is very helpful. Mucus may or may not be present. As a rule the stool is mushy in appearance, has a sour odor, and shows evidence of fermentation by the presence of gas bubbles on the bottom and the sides of the jar. The patient should be placed on the Schmidt diet for three or four days prior to the stool examination. This diet consists of a daily intake of three pints of milk, rolls and butter, four eggs, one-half pound of chopped meat, strained oatmeal, potato soup, and coffee or cocoa. Microscopic examination of the feces helps to rule out organic changes by an absence of pus cells and blood and to determine the presence or absence of ova or parasites.

The irritable colon lends itself to very precise röntgen demonstration. In a special article, Kantor[4] discusses this aspect in detail. The röntgen diagnosis may be made after the ingestion of a barium meal or after the use of a barium enema. The former method reveals changes in colonic motor function. The filling and emptying of the colon takes place in a scheduled time. After the ingestion of a barium meal this occurs normally as follows: In four hours the cecum begins to fill. At six hours the head of the column reaches the hepatic flexure. At nine hours the head of the column reaches the splenic flexure and the tail has cleared the terminal ileum. At twenty-four hours the bowels have moved once and the barium is shifted to the left side. At forty-eight hours the bowels have moved twice and the colon is empty. Any departure from this schedule is abnormal. The presence of an irritable colon is more than suggested by the following findings: At the six-hour observation the head of the column is beyond the splenic flexure. At the nine-hour period the head of the column is in the pelvic colon or rectum, with or without a bowel movement. In twenty-four hours the colon is empty. In addition to this, there are interesting changes in the form of the colon. These are characterized by a loss or an irregularity of haustrations, or by a mottling of the fecal column. There is scattered filling of the colon, usually marked spasm and an increased gas content. The barium enema demonstrates changes in colonic form. The use of the opaque enema is a great aid in demonstrating organic changes, and hence it is very valuable in differential diagnosis. In using the enema a standard technique should be employed. Normally, the colon should retain two quarts of barium mixture and should fill in three minutes with the container held one foot above the head of the patient. In cases of hyperirritability a much smaller amount is tolerated, while in instances of hypoirritability larger amounts may be retained without any discomfort. I recall one instance where the patient could retain only one pint of barium mixture. This knowledge becomes a practical asset if at a later date it becomes necessary for the patient to take an enema. In such instances the amount of fluid to be used can be definitely stated and the individual will not be instructed to take the standard amount.

Differential Diagnosis.—The syndrome of the irritable colon may simulate appendicitis, gallbladder disease, gastric and duodenal ulcer, cancer, cardiac disease, and many others, depending upon which segment of the colon is most markedly involved. When there is spasm and consequent overdistention of the cecum, pain is experienced in the right iliac fossa and the diagnosis of appendicitis is usually made. Excessive accumulations of gas in the hepatic flexure may give rise to pain, thus simulating cholecystitis. Irritation of the transverse colon may lead to a diagnosis of gastric or duodenal ulcer. It is in just such instances that a careful, painstaking history may avoid errors of diagnosis.

Prognosis.—The outlook for permanent cure is usually uncertain. However, definite relief can be assured in the majority of instances. In general, the prognosis depends upon a correct diagnosis and proper therapy over a long period of time. Success with the treatment requires a great deal of patience on the part of the patient and the physician.

Treatment.—The treatment of the irritable colon is quite simple. When it is associated with an organic lesion, attention should be directed to the more severe change. The first step in the treatment is the absolute withdrawal of all cathartics, enemas, and irrigations. The diet should be simple, bland, and well balanced. All fried foods should be prohibited. When the diet becomes too constipating, mineral oil and psylla seeds are indicated. Drugs have a very definite rôle in the treatment of this condition. Antispasmodics in the form of belladonna and sedatives tend to correct the overactivity and the im-

balance of the autonomic nervous system. Where gastric anacidity exists, dilute hydrochlori acid is indicated. Rest after meals and the application of heat to the abdomen are very beneficial as an adjunct to the other measures named. In general, the underlying imbalanced nervous system should always receive intelligent attention and the treatment should include general advice as to the proper manner of living and eating.

SUMMARY AND CONCLUSIONS

1. Functional disturbances are responsible for a great many ills to which mankind is subject.

2. The syndrome of the irritable colon is a very common disorder of digestion, frequently overlooked and very often confused with organic lesions such as appendicitis, cholecystitis, gastric and duodenal ulcer, cancer, and many others.

3. The diagnosis may be made from a careful history, by stool examination and by means of the röntgen ray.

4. The symptoms are very protean and consequently lead to many errors of diagnosis.

5. The prognosis depends upon a correct diagnosis and upon the institution of proper therapy for a prolonged period of time.

6. The treatment is quite simple and is outlined.

Discussion

DR. C. E. GRIMM (St. Marys): Dr. Condry has rendered us a distinct service in his splendid presentation of this interesting subject. He has covered the ground so completely that little remains to be considered. In view of the fact that the condition is so frequently encountered and so often unrecognized, it is fitting, at this time, to give the matter further discussion.

It is true that many of these patients do not receive the careful, painstaking attention to which they are justly entitled. It is the most natural thing in the world for a lazy or careless doctor to listen to their recitation of symptoms for a few minutes and then to hastily conclude that theirs is just a case of gastric hyperacidity or an old duodenal ulcer or pylorospasm or enteroptosis or hypochondriasis or what not. He may give them some flatulence tablets or an antacid powder and allow them to depart. If they return for further treatment and say that they are no better, he may try some bromides or something for the heart. Strange to say, many of these patients stick to their family physician as long as they live and become more or less reconciled to their plight. They are satisfied with a diagnosis of "chronic indigestion," "catarrh of the stomach," "biliousness," or "dyspepsia." They like to be taking medicine, and it often taxes the ingenuity of the medical attendant to think of something new to give them.

If it is suggested that they have a gastric analysis and some x-ray pictures made, the advice will often be ignored and they will continue right along in the same old rut. Some patients tire of going back to their doctor for treatment, and try some one else, or the corner druggist, for a while. Most of them return to the original physician, unless some one directs them to a good clinic or a gastroenterologist, where they should have been sent in the first place. It is not uncommon to see patients who have had these symptoms twenty to forty years.

Sara M. Jordon, M.D., and Everett D. Kiefer, M.D., of the Lahey Clinic, writing in the *Journal of the American Medical Association* in the issue of August 24, 1929, gave a detailed report of their findings in two hundred cases of "irritable colon." For a few minutes I shall review their findings, and shall quote them freely:

"The normal colon has three functions," namely, "the propulsion of the colonic contents from cecum to rectum, the reabsorption of fluid, and the digestion of cellulose." These functions depend largely upon "rhythmic and synchronized contraction and dilatation of the parts of the colon." In healthy persons, these processes occur unconsciously and without sensation of any sort. At times these functions become perverted, due to faulty "musculoneural activity." Now the picture changes, and instead of the normal "rhythmical contractions and dilatations" there is a condition or hyper- or hypoactivity of this musculoneural system.

"The contents of the colon are now propelled toward the rectum too quickly or too slowly. There may be an increased or a diminished reabsorption of fluids, and cellulose digestion may be imperfect."

The patient now becomes conscious that something abnormal is taking place. If his case is typical, he may have "epigastric distress with nausea and vomiting," or he may have "generalized abdominal distress with gaseous eructations, distention, and loss of appetite." "Frequently the pain is in the left upper quadrant and is associated with palpitation and 'heart pain.'"

"Gaseous eructations" is the commonest symptom. "Epigastric distress" comes second. "It may be mild and gnawing, or sharp and lancinating in character." It usually "bears no time relationship to the intake of food." Exceptionally, however, it

does, and at such times the condition may be mistaken for "typical ulcer distress."

As Dr. Condry has already stated, the distress may be located in the region of the appendix or in the gallbladder area, and no doubt many needless operations have been performed because of a faulty diagnosis in this connection.

Mucus frequently is seen in the stools, and the amount of mucus seems to have a definite relationship to the nervous state of these patients. The stools may be normal, or mushy or watery with catharsis. "Abnormal stools or the use of catharsis was noted in 191 cases out of 200 examined."

The gastric acidity may be normal, increased, diminished, or absent. Mostly it is normal.

Pain low in the back was noted in some cases. Canker sores in the mouth were seen at times. Fever during the attacks was mentioned in one case.

Symptoms referable to the heart were: palpitation, giddiness, faintness, dyspnea, and "heart pain."

The nervous symptoms mentioned were: headache, nervousness, fatigue, loss of vigor, and urticaria.

"Typical symptoms": In one group of patients "epigastric distress with nausea and vomiting" were the outstanding symptoms. In a second group "generalized abdominal distress and loss of appetite" were prominent. A third group complaine dof "pain in the left upper quadrant with palpitation and 'heart pain.' "

Drs. Jordan and Kiefer reported that, in a series of 200 cases of irritable colon examined by them, 46 had previously been operated upon for appendicitis. In other words, 23 per cent of the patients with colitis had had a previous appendectomy. They also stated that 30 per cent of 3,000 cases admitted to their gastrointestinal service showed no other lesion except mucous colitis.

In arriving at a diagnosis, a carefully taken history is of prime importance. The proper evaluation of the symptom complex, already mentioned, is necessary. Physical examination may show "generalized or localized abdominal tenderness." "Inflammatory, infectious or malignant abdominal conditions" must be excluded. The x-ray examination must never be neglected, as it is very helpful.

The röntgenologist has certain "diagnostic criteria" by which he is guided in making a diagnosis, namely:

"1. The length of the colon and the presence or absence of redundance.

"2. The rate at which the colon fills and empties.

"3. The appearance, depth, and frequency of haustral markings.

"4. The diameter of the colon under a certain head of pressure and with filling of the cecum.

"5. The absence of sensation or the occurrence of distress to the patient during the passage of the enema."

Certain arbitrary "normal standards for these criteria" are used as a guide. These have already been mentioned and will not be discussed at this time.

Jordan and Kiefer found "increased irritability in 150 cases." In seven it was decreased and normal in forty-three.

Most of these folks can be relieved. Some who have been chronic invalids have been benefited to such an extent that they have been able to resume their former occupations.

Treatment: "The severe cases should have rest in bed from one to three weeks." Their diet should be bland. As Dr. Condry has said, "catharsis, enemas and irrigations should be avoided." Atropine is useful to relieve the spasm. The application of heat to the abdomen is indicated. Lacto-dextrin is quite helpful in the elimination of gas due to colitis, and psylla seed acts as a mild laxative. One of the well-known pharmaceutical houses has just introduced a mineral oil combination with psylla seed which is useful in some of these cases.

X-ray "evidence of improvement" is coincident to "clinical improvement," so that it is well to have these patients checked up every three or four months by the röntgenologist.

Discussion

DR. A. S. GRIMM (St. Marys): I have a patient that I have treated for the last twenty years, off and on. He is a gentleman who accumulated some money and retired. He does not exercise. I have great difficulty in getting him to get along without a great deal of pain. He imagines that he has heart disease. His abdomen is distended and crowds up against his heart, and he is under the impression all the time that he is liable to die at any moment. A doctor once told him that he had better go home, make his will, and be prepared to die. That thing has been running on for years and years. He is a large man, weighing two hundred pounds or more.

Some two or three years ago I was called to see him, and he was in great distress. I said to him: "It is my duty to talk to you somewhat plainly. I dislike very much to tell you some things, but I am thoroughly convinced that you are not exercising

properly. You are eating more than you need, and that is the main cause of your distress."

He minded me to some extent and he got along pretty well for a year or so, but lately he has been complaining again. I am thoroughly convinced that this man is eating too much. He is eating food that he does not need, because of the fact that he does not exercise, and he just sits in his chair day in and day out, and eats a protein diet, carbohydrates, and everything that a person ought to eat when doing hard, muscular work. He is just keeping that up year in and year out. What would you do with a case like that?

DR. CONDRY (*closing the discussion*): I have nothing further to add, except possibly to suggest that at the last meeting of the American Gastroenterological Society one author suggested as a possible etiology an allergy due to disturbance of the normal intestinal or rather colonic flora. I don't know what to say about that, except to leave it with you as a possibility.

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A CONSIDERATION OF NEPHROSIS *

By M. I. MENDELOFF, M.D.
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The term *nephrosis* was introduced by Frederick Müller in 1905 to represent a degenerative renal lesion, in contradistinction to nephritis, in which there is an infectious process. The condition was carefully defined by Volhardt and Fahr in 1914 and later elaborated by Epstein in this country. Munk has described the condition as lipoid nephrosis.

The present conception of the disease is that it is a general metabolic disorder in which the renal tubules are damaged; that the condition is characterized by edema, albuminuria, and absence of certain findings which we usually meet with in other forms of nephritis.

The cause is obscure. Streptococcic infections play no part. Staphylococci, however, have been found by Claussen in nasal accessory sinuses in association with the disease, and when the sinus infection has been cleared up under treatment the albuminuria and edema disappeared.

Quite frequently there is a history of measles preceding the onset of the symptoms.

Tuberculosis was found in association with nephrosis by Volhardt and Fahr, who found fifteen cases of tuberculosis among fifty-five cases of nephrosis.

According to Epstein, the condition is found in young adult life. There is a relationship between infectious diseases, pregnancy, and nephrosis. In a fair percentage of cases Epstein found basal metabolism on the minus side, but with no changes in the thyroid gland.

In all likelihood, nephrosis is a systemic disorder in which the kidney is affected either by toxemia itself or by alteration in the metabolism produced by the general disturbance.

The renal pathology of nephrosis is confined for the most part to the convoluted tubules. There is a fatty degeneration of the epithelial lining of the tubules with an increase of the lipoids in the kidneys and blood. The changes in the tubules, according to Epstein, resemble changes caused by poisoning with bichloride with acute degeneration of the tubules amounting to destruction.

Ashoff regards kidney lesions of diabetes, gout, amyloid, exophthalmic goiter, and lipoid degeneration as examples of chronic nephrosis.

The edema in these cases is the result of disturbed osmotic pressure between the blood and tissues, while the albuminuria results from a metabolic disturbance in that the individual can not utilize the albumin. As a result of the albuminuria, the amount of blood protein is diminished. The blood lipoids are increased.

Onset is usually insidious. There is history of ill health, fatigue, lack of interest, loss of appetite, pallor, gain in weight, and edema. In a small percentage of cases the onset may be acute, with signs of cerebral edema lasting for a week, and then the condition clears up. Cases with slow onset usually recover slowly. The edema begins in the face and rapidly involves the subcutaneous tissues of the whole body, external genitalia, and serous cavities. The edema recurs frequently, with marked pallor and symptoms of indigestion. Frequently the condition is followed by changes in the kidneys and the development of a picture of interstitial nephritis.

Albuminuria is the first sign and may precede other findings. The albumin is not due to kidney pathology, but to the elimination of serum protein

* Read before the Kanawha Medical Society at Charleston, West Virginia, on April 18, 1930.

through the kidneys. The urine is reduced in amount, of high specific gravity, contains a variable amount of albumin; microscopically, there are present hyaline and granular casts, but rarely are red blood cells found. Doubly refractive lipoid bodies are present. The phenosulphonephthalein test does not show any diminution in the capacity of the kidney to excrete the dye.

The blood usually shows an anemia, but it is more apparent than real, only one case out of twenty-five showing marked anemia in the cases reported from the Mayo Clinic. The hemoglobin and the red count are slightly decreased, and the blood smear shows a picture of secondary anemia of mild degree. The blood protein is diminished, owing to the loss of a large amount of protein in the urine. Blood lipoids are increased. The blood nitrogen, urea nitrogen and creatinin are not increased in the uncomplicated case.

The basal metabolism is low in the majority of cases. This is shown by Epstein to not be due to any changes in the thyroid gland, but due to cellular changes, with the result that the thyroid secretion has lost its stimulating effect. The blood-pressure is not increased. There are no changes in the eye grounds, and the heart is not enlarged.

The diagnosis is made upon the history of insidious onset in a young adult with presence of edema, albuminuria, absence of nitrogen retention, normal phthalein output, normal blood-pressure, no enlargement of the heart, and negative findings in the eye grounds. The basal metabolism is low.

The prognosis is usually not favorable. In those cases in which there is an associated infection of accessory sinuses, clearing up of the infection occasionally leads to the disappearance of the albuminuria and of the edema.

In cases associated with myxedema, the use of thyroid extract has led to very marked improvement. In a few cases associated with syphilis of the kidney, the administration of antisyphilitic therapy has produced a beneficial effect. In a majority of the cases the condution recurs and the patient is finally carried off by some intercurrent disease.

Treatment.—Rest in bed to be enforced in the acute cases and during exacerbations in the chronic cases. Foci of infection to be searched and removed. Tonsils and teeth to be removed if diseased; sinuses to be trained if infected (same applies to the intestinal tract).

Replace loss of blood protein with a diet rich in protein, giving from 120 to 150 grams of protein a day. A diet rich in protein restores the protein balance and increases the osmotic pressure.

Reduce the high fat in the blood by giving a diet low in fat, using only from 20 to 40 grams of fat a day. Carbohydrates to be slightly increased to facilitate the burning up of the protein. Milk, fruit, and vegetables are permitted. The amount of sodium chloride to be reduced.

To reëstablish the renal metabolism, Epstein advises the use of thyroid extract.

When edema resists all forms of treatment, it may be necessary to resort to the use of diuretics. The use of calcium chloride or of ammonium chloride, and, in cases showing myocardial failure, the use of digitalis, may be indicated. When all this fails, the intravenous use of novasural or merbaphen and of salyrgan may be tried. The latter is to be given intravenously, beginning with ½ c.c. and increasing the dose if no diuresis is produced. A preliminary administration of ammonium chloride enhances the action of merbaphen and salyrgan.

With signs of cerebral edema present, do a lumbar puncture and administer magnesium sulphate intravenously, giving 10 c.c. for each kilo of body weight; also, magnesium sulphate by the bowel and mouth. In cases of anuria, the administration of 20% solution of glucose intravenously is indicated.

Before reporting two cases of nephrosis, I want to say that not every writer agrees with Epstein concerning his understanding of nephrosis. Thus, Elwyn believes that the condition is one of glomerulo-nephritis. Eli Moshkowitz can not subscribe to the conception that nephrosis is a disease in the sense that it has a precise background in pathology. He states that cases diagnosed as nephrosis coming to autopsy exhibited lesions of chronic nephritis or amyloid degeneration.

Buck advises that the term be limited to the condition known as lipoid nephrosis and first described by Muck.

Christian does not see why it is necessary to coin a new name to designate a form of nephritis which he calls "nephritis with edema." He reports that, in his laboratory, they were unable to produce, in dogs, edema, albuminuria, low basal metabolism, and low protein in blood when the dogs were bled at frequent intervals and then the washed red blood cells were returned to the dogs. In his larger experience he was only able to find at autopsy one case which he could classify as nephrosis.

In conclusion, I want to report briefly two cases under my care. The first case was reported at the

staff meeting of the Charleston General Hospital in 1925. It was a case of a young boy, twelve years of age, whom I was asked to see on account of edema and albuminuria. On examination there was a picture of a pale-looking boy with edema of both feet and ankles and edema of the lower lids. His hemoglobin was 76%, red blood cells 4,000, and smear showing secondary anemia. Throat, teeth and sinuses normal, the tonsils having been previously removed. Heart and lungs normal. Pulse and blood-pressure normal. Urine of high specific gravity, diminished in amount, contains from three to five grams of albumin; microscopically, many hyaline and granular casts. Blood chemistry, non-protein nitrogen 22 mg. per 100 c.c.; urea nitrogen, 12 mg. Pnenolsulphonephthalein test made by use of the dye intramuscularly gave 40% in first hour, 20% in the second hour—a total of 60%.

As the patient had already been on a protein-poor diet, I decided to put him on a high protein diet. The edema and albumin cleared up, but reappeared. Diuretics were tried in the form of diuretin and theocin. Patient felt better, but still had slight edema and albuminuria.

The following winter he contracted influenzal broncho-pneumonia, which resulted in death. No autopsy was obtained.

The other patient, age 21, married, was seen on account of loss of strength, pallor, and edema of ankles. Past history negative. History of measles, pertussis; tonsils removed at 17. Appendectomy at 19 with no complications. No pregnancies. Menses started at age of thirteen, 28-day variety, duration four days, flow not excessive.

Six months ago, following an attack of pharyngitis, patient began to complain of weakness and edema. Her physician found a large amount of albumin, and she was put on a low-protein diet. On several occasions this was replaced by a milk diet. She improved for a while, only to relapse to her state of poor health.

On examination she was found to be a fairly well developed female, weight 120 pounds, height 64 inches. Complexion rather pasty. The following findings were elicited:

Large amount of albumin, many hyaline and granular casts, rare red blood cells, edema of both ankles. Blood-pressure 100/62, heart not enlarged. Eye grounds normal.

Phenolsulphonephthalein test: First hour 40%, second hour 10% total 50%.

Blood chemistry: Non-protein nitrogen, 30 mgs. %; urea nitrogen, 12.5 mgs. %. Wassermann negative. Basal metabolism 27% (this was repeated a week later, when —24% was obtained.

The blood showed evidence of secondary anemia.

She was put on a diet rich in protein, low in fats, and given the usual amount of carbohydrates. Three grains of thyroid extract daily was given. She was much better when seen three weeks later. The edema has practically disappeared; albumin reduced to trace.

My impression is that these two cases represent different types of nephrosis, the second case representing features of myxedema.

In conclusion, I want to state that there are evidences showing that there exists a degenerative condition of the kidneys, known as nephrosis, which has a rather characteristic clinical picture associated with certain negative findings which distinguish it from forms of nephritis. The finding of low basal metabolism in most of the cases suggests a general disturbance of metabolism in which the kidney is affected.

CELIAC DISEASE *

(CHRONIC INTESTINAL INDIGESTION)

By G. C. HODGES, M.D.
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Celiac disease is a chronic form of diarrhea with acute exacerbation of an unknown etiology, usually beginning in the second year of life—rarely in the first year. However, it is not uncommon between the second and the fifth year. The following data might serve as evidence in favor of a specific causative agent:

1. Celiac disease has never been found in an exclusively breast-fed infant.

2. Many of these children are in good health until the prodromal period, which usually occurs when on a mixed diet.

3. The usual immediate improvement (where anorexia is absent) is explained on the basis that protein milk produces an intestinal habitat not favorable for propagation of the causative agent.

4. Pathological changes in pancreas, intestinal and other organs are the effects rather than the cause of the disease, as such changes are found in other chronic intestinal diseases.

5. If a proper diet is maintained, exacerbations are absent. The tolerance for carbohydrates im-

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* Read before the Fayette County Medical Society at Oak Hill, West Virginia, May, 1929.

proves when the causative agent has been completely removed from the intestinal canal.

6. This disease is not encountered frequently. It has been found in twins, sisters. Some believe it is transmitted from one child to another.

Diagnosis.—Early diagnosis is more difficult than when the condition has persisted for months or years. The four outstanding symptoms are: First, characteristic diarrhea; a large, foul, bulky and greasy stool from undigested fat. Second, a prominent, more or less doughy abdomen; the circumference of the abdomen is greater than that of the chest at the level of the mammary glands (the distention is due to fecal matter in intestines rather than gas). Third, loss of weight or stationary weight for months or years. Fourth, vomiting. This is characteristic, as it does not occur regularly. There may be intervals of weeks or months when no vomiting occurs. When it does occur it is usually only two or three times a day. The vomiting is caused by the low acidity of the stomach. There are intervals when free hydrochloric acid is absent.

Cessation of walking, anorexia, anemia, carpopedal spasm, and ascites were present in some instances. The picture is quite different from that of a marasmic child. Celiac children have formerly been well nourished, or perhaps fat, so the skin does not tightly cover the bones, but hangs in folds over the atrophied muscles. Muscle weakness is extreme; often the child can not voluntarily lift arm or leg. For some unexplained reason, the rat pads do not disappear from the cheeks as they do in marasmus, nor are the eyes sunken. So the facial expression is characteristic but not distressing. The child may have long hair, all its teeth, often talking, but weighing only fourteen or sixteen pounds and having to be fed and carried about as if it were only a few months old. The course of the disease depends on the dietary treatment, but it is slow at its best, since there is an intolerance for fats, sugar and starches, particularly fats.

Treatment.—Powdered protein milk diluted with water or Ringer's solution is considered to be superior to any other milk. During the trying period of anorexia and vomiting, which is often the case during the first few weeks of treatment, ample calories can be supplied by mixing the required number of level, packed tablespoonfuls of any standard commercial powdered protein milk with enough water (sweetened with saccharin) to form a smooth, palatable paste of creamlike consistency. In some cases, when anorexia and vomiting occurs, the patient will respond better if powdered skim milk is used. The tablespoon is the measure of choice, not only because it is convenient but because the number of level, packed tablespoonfuls required daily approximate the number of pounds the child weighs.

The three-phase diet, as recommended by Doctors Souer and Hollold, has proven a great success in treating celiac disease: Phase 1 (protein milk alone): Seldom is it necessary to use this milk longer than a few weeks. It is prudent that it be continued until the stools are firm, the abdominal distention slight, and the appetite good. If anorexia and vomiting are absent and ample food is consumed, the improvement and increase in weight are often so rapid that no addition is needed until the child's weight exceeds the best weight before illness began. By taking this precaution, the tolerance improves most rapidly and exacerbations are least likely to occur. It is advisable to begin with a rather low caloric feeding, and, if food be taken well, the number of level, packed tablespoonfuls should be increased by two every five to seven days until the number of tablespoonfuls approximate the number of pounds of the child's best previous weight.

The increase of protein milk must be governed by appetite, vomiting, age, degree of emaciation, and season of the year. The amount of water or Ringer's solution added to a feeding may be varied to suit the whim of the crild. Some will take food best in a bottle; others prefer to drink from a cup, and still others will often relish a thick food.

Phase 2: When the weight approximates the best weight before illness began, the Ringer's solution may be discontinued; but the protein milk must be continued for weeks or even months. Additions of lean beef juice, cottage cheese, scraped beef, and eggs may be given during this phase of treatment. If the child's gain has been satisfactory, or if it develops a dislike for protein milk, an equivalent amount of powdered svim milk may be substituted for part of the powdered protein milk. Cod-liver oil and orange juice should be given in gradually increasing quantities.

Phase 3 (addition of carbohydrates): Corn syrup, well-cooked cereals (rice, farina, arrowroot), zwieback, and well-cooked vegetables may be added in slowly increasing amounts. Should parenteral infections, hot weather, overfeeding or premature addition to the diet precipitate an exacerbation, then Phase 1 should be resumed without delay.

Conclusions.—1. The celiac syndrome disappears when carbohydrates and fats are taken from cows' milk.

2. The premature addition or inclusion is likely to provoke an exacerbation.

3. Bacterial action on carbohydrates and fatty foods probably play an important rôle in the etiology.

4. The disease has never been produced experimentally, but circumstantial evidence leads one to believe it might be transmitted from one child to another.

5. Prognosis depends more on diet than on severity or duration of the disease.

6. A standard three-phase protein diet yields rapid and permanent results in the majority of cases.

WHY NURSING STANDARDS *

By MAY M. MALONEY, R.N.
President West Virginia Nurses' Association
Fairmont, W. Va.

I wish to begin this short talk with a grateful "thank you" from the members of the organization which I represent for the privilege of appearing before you today, and bespeak this privilege for other nurses so that a closer, clearer relationship between our professions may be maintained.

I chose for my subject "*Why* Nursing Standards" as it is a subject in which all doctors are not only interested but insist shall be kept preëminent when nursing education is considered.

We have progressed through many periods of questioning. History tells us that a document is on file in England in the nature of a petition to Parliament, which was signed by a few doctors asking that Nightingale be recalled from Scutari on account of her standards. We have heard repeatedly that nurses were being "overtrained" or "overeducated," as though any one could know too much about any one subject—and especially a diversified one—but, throughout the years, thanks to the capable assistance of loyal physicians, the profession has advanced to the threshold of even greater things, which I shall later explain.

We are now regarding the profession as a whole, and if occasionally we seem to fail in our interpretation of nursing service and standards, is it not because local, instead of state and national, conditions are considered?

We are laboring earnestly with you not only to give better care to the sick but to give you better trained, more competent nurses to assist you in the public health field.

We hear occasionally of doctors who think that two grades of nurses should be trained—the higher grade for the prosperous, the lower grade for the poor. Can we afford to give serious thought to any educational scheme which would train both good and mediocre nurses when law, medicine, and all other professions have found this plan such a fallacy? Then, too, the great majority of physicians and surgeons demand skilled care for the greater group of their patients. How freqeuntly we hear the request, "Get the best nurse available," when the 'phone rings!

It takes a certain spirit, a certain attitude, to make and maintain standards. Our professions are so closely allied—we are so dependent on each other—that neither can work alone. We are required thereby to accept a mutual responsibility for the care of the sick as well as the prevention of illness.

We are very grateful to a former learned leader of your group, the late Dr. Frank LeMoyne Hupp, for the vision given us and the aid rendered us these past ten years in his work toward the betterment of schools of nursing and nursing education in West Virginia. We are this year, through the graduate nurses' association, establishing a scholarship in his memory for advanced education of this state's graduates.

We have made many strides in schools of nursing in recent years. The state has a requirement of one year of high school, but we are pleased to report today that eight schools have already raised their entrance requirement to four full years. Eleven instructors are employed, and other hospitals are seeking instructors for this fall.

I wish to make mention of three highly important pieces of work which are now engaging the attention of the American Nurses' Association, the results of which will enrich us all. It is the work of the Grading Committee, which is composed of twenty-one leading medical and nursing educators, and is financed largely by nurses. The project is threefold:

1. The study of the supply and demand of nursing service.

2. What nurses need to know and how they may be taught.

3. The grading of schools of nursing.

It will revolutionize our thinking, and, at the same time, if proven, greatly simplify the problems of the small hospital, if the cost sheet, compiled from

* This address by Miss Maloney was made before the West Virginia State Medical Association at White Sulphur Springs, on May 22, 1930.

many studies, shows us that the small hospital can be manned more economically by graduate help than by student help (if a class or school of nursing be maintained). We have reasons to believe, from results obtained to date, that their findings on this point will be illuminating.

Second, the great problem of the unnursed sick will receive careful study. It is startling to learn that only twenty per cent of all who are ill enter hospitals and the remaining eighty per cent are ill at home with little or no care. This is due to two reasons: (*a*) Lack of distribution of nursing service, and (*b*) lack of finances on the part of the patient. Here is a triune responsibility which your profession and mine must work out with the aid of the public.

Nursing is seasonable and at best provides but a living wage. The fifty-cent hour, which is average, is not on a par with arts and trades—to say nothing of professions—and yet this small salary prohibits the great mass of sick folk from receiving nursing care. Our next problem, then—yours and mine—is joint thinking toward the redistribution of nursing service on an hourly or part-time basis, that the patient may be properly cared for, the doctor receive skilled assistance, and the nurse provided with a livelihood.

The third item for national consideration is the grading of the individual school of nursing, first reports on which are practically ready for release.

It is because of these plans that we say that nursing is on the threshold of greater attainments, and because of which standards must be maintained, as all these ventures (as well as all our others) call for the resourceful, alert, well-educated nurse.

Let us, then, together, as of yore, strive toward the accomplishment of those ideals which will best exemplify the spirit of service to those whom we would serve.

A THINKING NUCLEUS ON CRIPPLED CHILDREN *

By A. T. Post, M.D.
Clarksburg, W. Va.

The question of crippled children is such a large one, and the time allotted so short, that it will only be possible to give you a "thinking nucleus" and a brief outline of this work.

The Crippled Children's Council of West Virginia was created by an act of the legislature in 1925, but was more or less a "paper" organization until 1929, when the state legislature appropriated $40,000 a year for two years. The council is composed of seven members, as follows: Hon. H. N. Bradley, of the State Board of Control; Dr. W. T. Henshaw, State Health Commissioner; Professor W. C. Cook, State Superintendent of Free Schools; Miss Mary Yager, executive secretary of the State Board of Children's Guardians—all *ex-officio*—and three other members, appointed by the governor from the membership of the Crippled Children's Society. The members of the council appointed by the governor are Mrs. S. W. Price of Scarbro, Dr. J. E. Rader of Huntington, and myself. The duties of the council are to formulate and put into effect administrative policies; to coördinate the work done under existing statutes relative to care, cure, and vocational education; to inquire into the number, the condition, and the existing educational hospital and professional facilities, and to recommend more adequate means for promoting the care, treatment, education, and general welfare of the physically handicapped children.

We wish to express our sincere thanks to the West Virginia State Medical Association and the State Board of Health for a list of orthopedists in the state, all of whom were gladly accepted by the Crippled Children's Council. A letter was written to the orthopedists, informing each of his appointment and asking if he would accept, and, if so, to please give us a list of all hospitals in the state which he would recommend as being equipped and desirable for the care and treatment of crippled children. All the orthopedists accepted, and by so doing agreed to operate and treat all the indigent or poor crippled children without pay, and all hospitals recommended by these surgeons are taking these children at the minimum rate of fifteen dollars per week.

Realizing and deeply appreciating the wholehearted coöperation of these surgeons, the Crippled Children's Council is carefully guarding against any imposition, through its social history record and other inquiries relative to family holdings, income, and earnings. The council desires to avoid encouragement of dependency or pauperizing the people of the state in any way whatsoever; but, on the other hand, is endeavoring to get some one or a group of a family, relatives or friends, to pay all or even a part of the expense of treatment. Some families are financially able to have their children treated, and to them is given advice but no financial aid. Other families can pay if given time; these we assist in making desirable arrangements, but give no financial

* Presented before the West Virginia State Medical Association at White Sulphur Springs on May 22, 1930.

aid. Many families can pay a part; we insist on these paying as much as possible, and we will give them financial aid on hospital bills and braces. The largest group of all, however, are the families wholly unable to pay anything. These are being hospitalized as rapidly as possible with out facilities and limited funds. It may interest you to know that our executive secretary and one stenographer are the only persons receiving salaries from this fund, all others serving without pay.

First, humanitarianism. Is it not proper and right to remove, as far as possible, the physical handicaps of our children, that they may not be debarred from the fullest measure of life development and attainment to which their natural endowment would otherwise entitle them?

Second, social economy. Is it not better to spend time and money on these children now, that they may become happy, intelligent, bread-earning citizens, instead of being dependent on friends or state throughout their entire lives?

Third, patriotism. Is it not in the heart of every red-blooded West Virginian that we should not lag behind, but compare favorably with, our sister states and do our share to maintain our country as the greatest nation in the world? Then, as individuals and groups, let us make our state and our United States greater and stronger by removing the handicaps of the crippled children, each a future citizen.

Many years before Christ was born, and many centuries before white man ever set foot on what is now the United States, the question of crippled children was an issue. Some of these old rulers had a very simple, yet positive, way of dealing with crippled children, and that was by putting them to death. Plato, who was considered one of the wisest and most diplomatic, issued the following order: "The proper officers will take the offspring of the good parents to the pen or fold and there deposit them with certain nurses who dwell in a separate quarter; but the offspring of the *inferior*, or the *better* when they chance to be *deformed*, will be put away in some mysterious, unknown place, as they should be."

Today we would consider the death method to be very inhuman and revolting; but, after all, would it not be just about as human as to leave them endure a life of torture and misery?

Our national government is spending millions of dollars to prevent and cure diseases of sheep, hogs, cattle, and other lower animals; to destroy bugs, beetles, and vermin which cripple the growth and production of plants and trees; but it has done nothing for the crippled children. Why? Because the crippled children form a hidden, silent army without political influence or powerful lobby to present their cause to Congress. However, President Hoover is planning a "White House" conference later this year, which we believe will result in obtaining national aid.

We have in West Virginia about seven or eight thousand crippled children, and in the United States about half a million of them. The Crippled Children's Council can hospitalize about three per cent, and, together with the Shriners, service clubs, and all other groups and individuals, can hospitalize only about seven or eight per cent, which will just about take care of the increase due to increased population and diseases, and will decrease the total number very little, if any. Just now, there is one hope of immediate relief, and that is the success of the Hon. W. S. Johnson, president of the Crippled Children's Society, a volunteer organization, to organize a branch society in each county of the state. It is his ambition to have every man and woman in each county to join the society by paying one dollar each, every cent of which will be used to help hospitalize indigent or poor crippled children in their respective counties. This will give the citizens of West Virginia an opportunity to play their part in one of the greatest altruistic movements ever undertaken in the state, the success of which would materially reduce the number of crippled and dependent children.

The Crippled Children's Council has been active less than a year, considerable of which time was consumed in organizing, but it has examined, diagnosed, and advised treatment of eight hundred and twenty-four, and of this number about a hundred have been or are being treated through financial aid of the council, while several are being treated through encouragement and advice of the council, but are receiving no financial assistance.

The family physician of each child examined is written a letter, telling him of the diagnosis and the treatment advised. The family physician is the one who actually enters the homes of the people where illness and suffering exists, and relieves their physical pain and eases their mental anxiety and guides them to return of health; to whom the family skeleton is revealed and family secrets are confided; to whom they go for advice in general, and on whom rests the burden of giving instructions upon which the success or failure of the lives of many depend, and upon whom we depend for encouraging and assisting the parents to bring or send in the crippled children

and to coöperate in their treatment and general welfare. So it is indeed gratifying to note the unanimous support and the active interest of the physicians of West Virginia, which well illustrates the true spirit of our own medical and surgical men.

No other altruistic movement instituted in the state has ever had the whole-hearted support of all groups and individuals as has the work among underprivileged and crippled children, which assures us that great strides will be made in the near future to relieve their suffering, to increase their happiness and to make them useful, high-class citizens, and by so doing elevate our future citizenship, to which we must soon trust the destiny of our government.

CASE REPORTS

AN INDOLENT ULCER WITH PECULIAR BACTERIOLOGIC FINDINGS

By B. C. JOHN, M.D., *and* R. S. SPRAY, PH.D.
Morgantown, W. Va.

Ulcers of a very virulent nature, characterized by a fetid, grayish, pulpy exudate, which infiltrate and destroy the tissues in all directions, are common in several tropical countries in both hemispheres. The phagedenic ulcers of Mozambique, Madagascar, and the Guianas are undoubtedly the same disease; those of Cochin-China probably so. This phagedenic process characteristically occurs on the lower third of the legs, and develops commonly subsequent to a minor bruise or other injury. This tropical form is variously attributed to *Leishmanias* and to several spirochetes, notably including *Treponema Schaudinni* (Prowazek), although the latter species seems rather indefinitely determined.

A second type, granuloma inguinale, normally restricted to the pudendal and anal regions, and also usually of tropical distribution, has been attributed by Donovan[1] to intracytoplasmic inclusions, which have been studied by Walker[2] and presumably identified as a member of the Friedlander bacillus group.

That the disease is not necessarily restricted to the tropics is indicated by the studies of Symmers and Frost[3] and of Cornwall and Peck[4] in New York City.

Parounagian and Goodman[5] report a case in a white native resident of New York City, in which the neck and lip were involved in addition to the scrotal and anal lesions. They call attention to the similarity of their cultures to the organisms of the Friedlander group, notably the organism of rhinoscleroma.

With this brief introduction we would present a case of an ulcer occurring on the leg of a native white woman, fifty-six years of age, robust and well except for lupus exanthematosis of two years' duration, which recently responded readily to intravenous gold sodium thiosulphate (100 mg.). The blood was negative by Kahn test at the height of the ulceration.

The ulcer began with no subjective symptoms, and there was no known abrasion of the skin at the site. When first noted, the skin of the affected area (posterior surface of lower leg) was slightly swollen and discolored. A small, gray papule appeared, which slowly increased to a size of 1.5 cm. in diameter. Desquamation followed, and a thin, serous fluid exuded, forming a scab which came off twenty-four hours later, leaving an ulcer with sharply defined edges, deep and secreting the serous material. The edges of the ulcer appeared to be granulating, while the base consisted of grayish, tough tissue resembling fascia, which could be removed only slightly and with considerable difficulty.

The ulcer increased in size and depth by erosion of the edge and base, and proved very intractable to treatment, requiring daily attention. It finally healed with a dark scab which showed deep cicatrization below, both still evident and present at this date, some five months from initial observation. During the entire course of ulceration there was no observable enlargement of the neighboring lymph nodes.

Cultures were taken twice during the height of the ulceration, and on both occasions yielded a pure culture of a gram-negative, encapsulated bacillus. While this organism has not as yet been certainly identified, it apparently falls in the Friedlander bacillus group, and in its characteristics checks closely with *Klebsiella granulomatis* (Beaurefaire-Aragao), Bergey *et al.* This latter organism has been reported as associated with the lesions of granuloma inguinale, and may be the same organism reported by others, as noted above.

Our cultures may be described as follows:

Microscopically: A short, plump, gram-negative bacillus, from 2 to 4.5–5.0 microns long; chiefly singly and pairs, no long chains. Capsule evident and conspicuous by Hiss stain, particularly from Loeffler's serum, less evident on dextrose agar on initial cultures. Capsule maintained, but diminishing on successive sub-cultures. Distinct bipolar staining tendency (scarcely metachromatic granules). Noncotile in all tests from solid and fluid mediums.

Culturally: Growth abundant on all routine mediums; slimy, tenacious, not mucilaginous. Gelatin showing "nail-head" growth without liquefaction. Broth, doubtful trace of pellicle, turbid with heavy, tenacious sediment resisting diffusion on shaking. Litmus milk acid at twenty-four hours, with coagulation at forty-eight hours; no subsequent peptonization.

Indol negative; nitrates reduced; methyl red negative; Voges-Proskauer positive; lead acetate agar not blackened.

Carbohydrates fermented with acid and gas: Glucose, levulose, galactose, maltose, saccharose, mannitol, glycerol, salicin, starch, raffinose, xylose, lactose, arabinose, adonitol, dextrin, inositol, mannose, melezitose, rhamnose, sorbitol, trehalose.

Carbohydrates not fermented: Dulcitol, inulin, lyxose.

These characteristics, it may be noted, do not identify the organism as a known type. In fact, they do not eliminate the possibility of the placing in the genus *Aërobacter*. However, the relatively inactive fermentation with little gas, together with the type of growth on Endo's medium, clearly places it apart from the species of *Aërobacter* with which we are familiar, and from our studies we believe it to be a true *Klebsiella*.

We would not imply that this is a case of either tropical ulcer or of granuloma inguinale, although it displayed characteristics of both. The finding of a pure culture, on two occasions, of an organism of a type repeatedly observed in the latter condition, we feel, renders this case of peculiar interest and deserving of report.

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A CLINICAL REPORT ON A CASE OF TETANUS

By G. T. CONLEY, M.D.
Williamson, W. Va.

E. N., a male, eight years old, fairly well developed, of moderate mentality, no other pathology than the one under discussion. This case was referred to the hospital for treatment through the kindness of Dr. Lawton, of Thacker, West Virginia.

History on admission to the hospital on January 2, 1930, was as follows:

Several days previous he had been burned on the back of his hand and one one of his fingers by the explosion of a firecracker. From the symptoms present a diagnosis of tetanus was made, this being in keeping with the diagnosis made by Dr. Lawton. On entering the hospital he was almost in a constant state of convulsions with all the attendant symptoms of tetanus.

Treatment.—Patient entered the hospital at 9 P.M. and at 9:15 P.M. he received 8,000 units of tetanus antitoxin intraspinally; 20,000 units of tetanus antitoxin intravenously.

Patient was very restless after reacting from the intravenous injection, perhaps from both, with marked retraction of the head. He seemed to rally at 4 A.M. and at 5 A.M. regained consciousness.

Fluids were forced. Sodium luminal, two grains subcutaneously. Patient spent a very restless day.

Second day: At 7:30 P.M. tetanus serum 20,000 units intravenously; sodium luminal, two grains subcutaneously.

Patient very restless. General condition unimproved. Unconscious part of the time.

Third day: Restless; cervical rigidity; 8 A.M., sodium luminal, two grains subcutaneously; 8 P.M., 20,000 units tetanus antitoxin intravenously. Restless, uncomfortable; convulsions.

Fourth day: Condition unchanged; 20,000 units tetanus antitoxin intravenously; two grains sodium luminal subcutaneously.

Fifth day: Condition at a standstill; sodium luminal, two grains intravenously; 8 P.M., 15,000 units tetanus antitoxin. At midnight the patient was resting well, sleeping part of the time; quieter than heretofore.

Sixth day: 8 A.M., two grains sodium luminal intravenously; rested well all day; 8 P.M., two grains sodium luminal subcutaneously; rested well all night.

Seventh day: 4 P.M., two grains sodium luminal subcutaneously; rested well during the day. At 9 P.M., patient had a violent convulsion. Two grains of sodium luminal were administered intravenously. Sleeping; restless at times.

Eighth day: 8 A.M., very rigid, restless; sodium luminal, two grains, intravenously; 7 P.M., restless, sodium luminal, two grains, subcutaneously. Midnight, sleeping.

Ninth day: 8 A.M., had a very good night; so-

dium luminal, two grains subcutaneously. Resting well; taking nourishment.

Tenth day: Sodium luminal, two grains subcutaneously; had a very good day.

Eleventh day: 8 A.M., restless; sodium luminal, two grains subcutaneously; 8 P.M., resting; slept well.

Twelfth day: 8 A.M., restless at times, otherwise comfortable; 8 P.M., restless; sodium luminal, two grains subcutaneously; rested well and had a good night.

Thirteenth day: 8 A.M., restless; sodium luminal two grains subcutaneously; 8 P.M., uncomfortable; sodium luminal, two grains subcutaneously.

Fourteenth day: Resting well; sodium luminal, two grains subcutaneously. Discharged from the hospital very much improved; condition such as would make his future care by his family all that was necessary.

In a recent letter, dated June 1, 1930, from his father, we hear that the boy is doing well, although his recovery has been handicapped by a case of whooping cough he contracted on his arrival at home.

The motive prompting this paper is to bring out the fact that we should not be too pessimistic in treating these cases, and also to point out the value of sodium luminal as a sedative in conditions of this character.

HODGKINS DISEASE *

By FRANK S. HARKLEROAD, M.D.
Harvey, W. Va.

Negro male, age 33 years, well developed and well nourished; chief complaint, dyspnea and cough.

Family history: Father dead, age 87, senility; mother dead, age 65 senility; three brothers and four sisters, living and well; one brother dead, age 55, cause unknown; no history of cancer or tuberculosis.

Past history: Diseases of childhood, gonococcal infection five years ago; no other illnesses.

Marital history: Married one year ago; wife living and well, no pregnancies.

Present illness: Subject was a coal miner, working at Prudence, W. Va., and health had been good prior to December 17, 1929, at which time he contracted an acute cold and cough following a hunting trip. Acute cold developed into a chronic bronchitis with dyspnea and mucous râles scattered throughout both lungs. Temperature 101° F., pulse 85. Chest condition improved somewhat, and patient returned to work January 15, 1930, working five days. His condition became worse. Physical examination at this time revealed mucous râles over both lungs, simulating bronchial asthma. Subject was observed at regular intervals, with complaint growing worse, and during the latter part of March, 1930, physical examination revealed a consolidation in the right upper chest, with dyspnea and a slight, productive cough. Temperature reading at this time was 101° F.; blood Wassermann and 24-hour sputum examination were negative.

Subject entered the Oak Hill Hospital on April 4, 1930, for further examination and treatment.

Physical examination: Eyes, ears, nose and throat normal; teeth in good repair. Neck is heavy and glands are palpable, not firm, but rather soft and not attached to skin. Chest normal in form. There is marked dullness on percussion over upper third of right chest, with numerous loud, dry râles elicited over both upper lungs; not so pronounced, however, on the left. There is distinct bronchial breathing over the right upper third, extending anteriorly midway between nipple and clavicle and posteriorly to angle of scapula, while on the left it is clear except for the râles. The heart position, also action, is normal. The abdomen, extremities, and genito-urinary system are all negative. Temperature 98.6°, pulse 85, respiration 21; blood-pressure, systolic 128, diastolic 88. Height, 71 inches; weight, 164 pounds.

X-ray findings: There is an area of consolidation, with the lower borders not definite, extending down to the sixth rib on the right, with the hilus shadow on the left considerably increased in size and with well-defined border.

X-ray findings on April 11, 1930, were identical to those found on admission. On April 25, 1930, shadow in upper right chest showed no change from previous observation, except that the lower border is most distinctly marked, being in sharp contrast to remainder of lung field. On May 19, 1930, the consolidation in the upper portion of the left chest, as previously described, remained unchanged; while below the area of consolidation there was considerable increase of bronchial markings, giving a woolly appearance, and the diaphragm shadow was in-

* Read before the Fayette County Medical Society, June 10, 1930

creased. On the right there was an increased deepening from below upward until the apices were about half involved.

Blood examination: April 7, 1930, total red blood cells 4,000,000, white blood cells 7,500. Differential white lymphocytes 30, large mononuclear leucocytes 5, polynuclears 65; hemoglobin 80, color index 1, coagulation time 6½ minutes. May 19, 1930, total red cells 4,350,000, total white cells 14,000; differential white lymphocytes 16, large mononuclears 4, polynuclears 80; hemoglobin 80, colo rindex 93; coagulation time six minutes. Blood Wassermann negative.

Sputum examination for tuberculosis was negative. The urine, on examination, had a dark amber color, turbid appearance; reaction, acid; specific gravity 1.020; slight sediment; albumin negative, sugar negative, pus negative; blood rare; few hyaline and granular casts.

Progress notes: May 16, 1930, examination of chest shows dullness over right upper anteriorly and both uppers posteriorly. There is an absence of breath sounds over the right chest posteriorly from above downward to junction of lower and middle thirds of lung field and anteriorly over the second and third ribs. On the left the breath sounds are slightly increased in patches over the upper portion to the middle of the scapulæ, below which line the breath sounds are distinct and a little exaggerated, but are not bronchial in type. There are no râles at any point. There are no changes to be noted in any other portion of the body. It is to be especially noted that there is no enlargement of the axillary or inguinal glands.

Treatment: Usual hospital care; routine diet; Fowler's solution in large dosage, but carefully observed, and x-ray therapy.

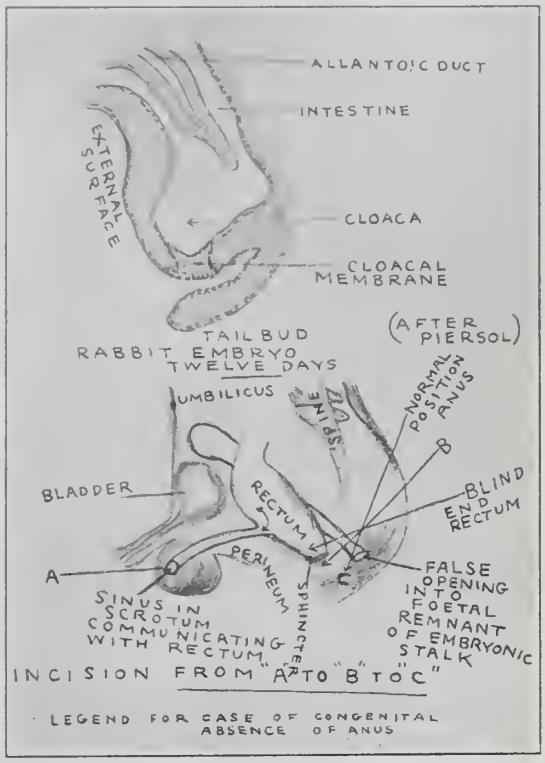
Following patient's admission to hospital, his condition rapidly became worse. Swelling of neck on the left side continued to gradually enlarge. Cough became more excessive, expectoration quite profuse, and breathing more difficult. On the day preceding death, the condition of the chest was almost uniform. It is considered here that the ravishness of the disease was unusually rapid, there being no objective evidence of its extending beyond the lung field and supraclavicular and cervical regions.

Since we were unable to obtain a biopsy of glandular tissue for histological study, we could not definitely confirm our diagnosis.

CONGENITAL ABSENCE OF ANUS, WITH SPONTANEOUS FORMATION OF OUTLET IN SCROTUM *

By HARRY M. HALL, M.D.
Wheeling, W. Va.

Baby, son of L. P., was born December 29, 1929, and was regarded as normal. Shortly after birth it was noted by the nurse that there was no anus. An attempt at affording an artificial one, through what appeared to be a thin septum, failed. The child, of



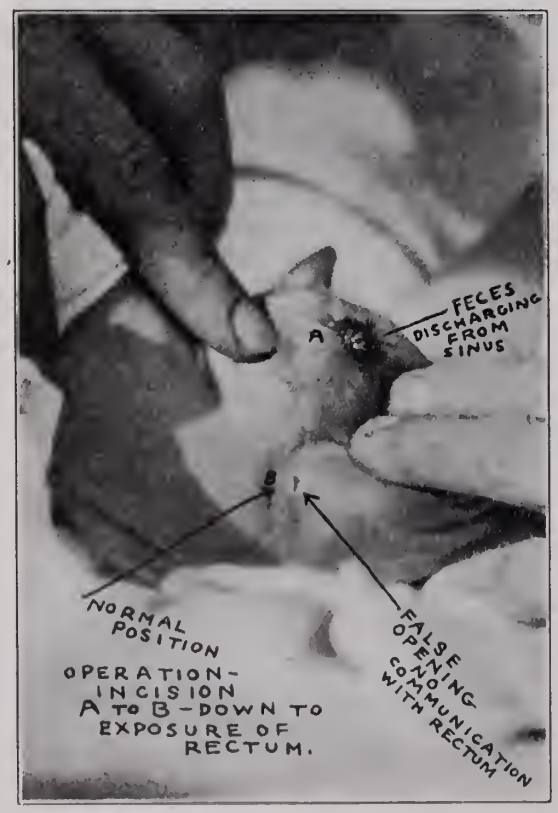
course, had no bowel movement. Two days later, a small, bleblike mass raised up in the scrotum about one inch below the junction with the penis. This immediately broke down and mecomium was discharged in considerable quantities. The opening in the scrotum became somewhat distended and feces were passed continuously, but not in sufficient quantities to meet the demands of a healthy infant.

X-ray on January 2, 1930, showed a picture of the lower abdomen with opaque catheters inserted in the sinuses, one opening through the middle of the scrotum, the other near the imperforate anus. The catheter introduced through the scrotum enters the colon, which fills partially with barium. A small quantity of barium, introduced through the sinus near the anus, seems to fill a portion of the gut

* Presented to the staff of the Ohio Valley General Hospital.

higher up and more to the anterior wall. No communication between the two portions of the gut thus filled could be made out. This was later found to be the remains, presumably, of the cloaca.

At time of operation, on January 6, there was no rectum existent, in the ordinary meaning of the term; but, instead, through an embryological defect, the rectum passed up through a sinuslike formation, discharging into the scrotum about an inch below the penis, between the testicles. Fecal matter passed out through this opening, but none through the ordinary site of the anus.



Operation.—Catheter was passed through the sinus at the scrotum, down through to meet the so-called rectum. This was laid wide open, exposing the sinus full length as it passed down in the path of the incision. The end of the rectum was found and exposed to view, the release of a large quantity of fecal matter and gas under pressure revealing, very fortunately, its location before possible wounding of it occurred. Finger was inserted and what amounted to a patent sphincter was made out. This was exposed and allowed to remain so. The wound was not closed with sutures of any kind, the object being to allow it to heal from the bottom up. The reason for this procedure was that it was feared that the kind of epithelium lining the sinus might, if

stitched, reform a second cavity on healing. The wound was packed with ordinary gauze and vaseline.

About four weeks following operation, a discharge of white material took place at the umbilicus. This proved to be the barium inserted in the sinus located near the normal position of the anus and which had made its reappearance at the above unusual situation.

On June 1 the wound had healed, and the child now appears to be healthy in every respect, with normal evacuations of the bowels.

RAYNAUD'S DISEASE

By MAXFIELD BARBER, M.D.
Charleston, W. Va.

Boy, aged eleven, entered hospital in July, 1928, with a temperature of 102°, pulse 120, respiration 30, complaining of gangrene of fingers.

He had previously been a patient in another hospital, from November, 1927, to January, 1928. Abstracts from that record show he had a negative past history until an attack of rheumatism about a year previous to entry, requiring bed care. On entry he complained of pain in right leg of one week's duration, and an impetiginous eruption of leg with enlarged inguinal glands. Inflamed tonsils and temperature of 99° were the only other positive findings. White blood cell count was 20,000, 81% polymorphonuclears; urine negative; x-ray of heart and lungs negative.

During his stay, red eruption was noted on arms and legs, size of a nickel, without pain or itching. There developed an induration of left inner thigh, diagnosed as phlebitis. He had soreness of arms and legs at times; red spots at various places on body; marked swelling of face for several days, and marked swelling and pain in knee for a few days. Six teeth were extracted and T. & A. done in an endeavor to remove infected foci. He showed steady improvement and was discharged with diagnosis of acute rheumatic arthritis.

His entry into Charleston General Hospital showed a sad change from the above picture, and we were unable to obtain any history to cover the interval. The child was badly emaciated, anemic, toxic, with contractures of legs and arms as if of long inactivity. There was dry gangrene of all the fingers of both hands except the right hand, down to second joint. The fingers below gangrene were cold to the touch. There were encrusted sores on the elbows, and a fading erythema of the legs with a serpiginous border.

During his stay in the hospital, the gangrene made slow but steady progress of a few millimeters. There was some pain and swelling in right knee and left ankle. He became unable to tell when his bowels moved for over a month, when this reflex sensation returned. His nose became cyanotic in slight degree. His feet were subject to intermittent attacks of painful reddening with a sharp line of demarcation. During his stay, his fever went up to 101–102° daily and dropped to normal daily, the pulse varying with the fever but rarely dropping to normal.

His laboratory findings included a normal spinal fluid with negative Wassermann; blood count of 25,000 with polymorphonuclears in normal limits. Subsequent counts varied from 36,000 to 15,000. Blood Wassermann negative; blood culture negative; blood sugar normal. Urine, on entry, showed albumin, blood and pus cells, but this cleared up during hospital stay.

X-ray of teeth showed no root pathology. X-ray of heart showed normal position and size. X-ray of hands showed no bone pathology of gangrenous fingers.

The patient was given anti-rheumatic remedies and local treatment of hands. All of the gangrenous fingers eventually amputated themselves, leaving healthy stumps that healed. The boy's general condition improved, but we had little success in helping the contracture of arms and legs to a working condition.

A diagnosis of Raynaud's disease was made and the child sent home.

JAMAICA GINGER PARALYSIS *

By C. J. BURNS, M.D.
Columbus, Ohio

I became interested in a case of so-called jamaica ginger paralysis during the first week of March, 1930. A patient by the name of S—— was half carried and half dragged into my office by his sister and brother-in-law, and was unable to stand without the use of a cane, as he would pitch forward on his face or fall backwards.

History revealed the fact that, six weeks prior to the inception of his paralysis, he had taken a quart of moonshine whiskey for a very bad cold, and he claimed that it took him six days to imbibe these thirty-two ounces. Like all the rest of the profession, I was cynical and said it was due to poisoning, and I could do nothing for him. His sister pleaded with me to put him in the hospital and try to do something, which I did. We gave him empirical treatment of sweats, catharsis, Fowler's solution, and strychnin. No improvement was noted in forty-eight hours.

The next day I was called to see another patient who was practically bedfast and unable to use his hands, unable to walk or stand, and the moment his legs were crossed it was with great difficulty that we could uncross them, as they became firmly wedged. His history, obtained not from him but

* From the Laboratories of Mount Carmel Hospital, Columbus, Ohio. Report presented before the staff of Mount Carmel Hospital on April 30, 1930, by Dr. C. J. Burns and Dr. R. A. Kidd, Jr.

from his wife and sisters, was that he had imbibed one bottle of home-brew three weeks prior to the inception of his paralysis, but no whiskey or jamaica ginger.

That same evening I was called to see a very respectable woman, whom I had known for years and had treated and knew she was not an alcoholic, who had taken a glass of home-brew about three weeks prior to the inception of her foot paralysis. Her husband refused to allow her medical attention because he thought it was due to jamaica poisoning.

After studying these three cases, I became impressed with the fact that these might be due to infection of a low type rather than to poisoning, as careful inquiry on my part showed that sodium thiosulphate did absolutely no good and they became worse. I suggested the infectious theory of Dr. Robert Kidd, Jr., a neurologist, and had him go over these cases thoroughly, and he concurred with my opinion that it might be due to infection precipitated by alcoholism.

Empirically, we injected the two male patients intraspinally with horse serum and awaited the results. The first forty-eight hours, terrific anaphylactic reaction ensued and the constant attendance of nurses was required along with therapeutic measures to save their lives. On the fourth day, all the terrific pains they had complained of in their hands and legs had disappeared and they were quite happy. From the seventh to the tenth day, S—— was able to get up from his bed and, with the aid of crutches, walk around the ward. The other patient, B——, was able to feed himself, which was impossible before, and to comb his hair, wash his face, light his pipe, take care of defecation, etc., without the aid of a nurse.

Today, S—— is walking without the aid of crutches or cane, and is feeding other unfortunates in the hospital. B—— is walking by holding on to chairs and the bed, and is getting around in a wheel chair and complains of absolutely no pain, as do all the others treated. The woman patient, who was injected later, says all her pains have disappeared, but we do not see much improvement in the foot drop, as she is a late case.

During the last two months we have treated fifty cases of so-called jamaica poisoning from the very early stages of paralysis—that is, from a duration of two days to eight weeks—and after injection of 30 c.c. of normal horse serum the pains disappear, the disease is aborted within forty-eight hours, and improvement starts immediately.

The injection, which is intraspinous, is given by taking out 40 c.c. of spinal fluid and injecting 30 c.c. of normal horse serum. The reaction following injection occurs about two hours later. This reaction manifests itself by rise in temperature, severe headache, backache, nausea, and vomiting. This is controlled after the reaction occurs by giving adrenalin chloride 15 minims, morphine sulphate one-fourth grain. Anaphylactic urticaria occurs from five to fifteen days after injection. So far, we have had no fatal results. I believe this treatment to be dangerous unless carried out with every aseptic condition and the utmost care taken during injection.

Neurological findings in these cases are: paralysis of arms and legs in about eighty per cent of the cases, thumbs are markedly affected in all cases, only only feet are affected in about fifteen per cent of the cases. Reflexes, especially the patellars, biceps, triceps, supinators are all hyperactive. No anesthesia or hyperesthesia is found to any great extent, although present in some cases. Nerve trunks are not tender. An ataxia and positive Romberg are present in most cases.

The disease, after injection of the serum, is, we believe, an orthopedic problem, as an anterior horn-cell infection seems to be. Orthopedic men consulted believe diathermy, heat, massage, and splints are necessary to prevent deformities.

ABSTRACTS

The Prognosis of Tetanus

Calvin and Goldberg present an excellent article under the above title in the *Journal of the American Medical Association* (June 21, 1930). They review 183 cases treated at the Cook County Hospital during a period of thirteen years. While extolling the virtue of antitetanic serum as a prophylactic, their conclusion as to its curative value is probably more pessimistic than is the opinion of it now held by the profession generally. We quote their excellent summary and their comments:

Summary.—1. The mortality from tetanus at the Cook County Hospital has not decreased in the past fifteen years, in spite of the fact that, in the last five years, larger amounts of antitoxin were used and it was given intraspinally to more patients.

2. A larger number of cases occurred between the ten- and fifteen-year period than between any other five-year age period, and the smallest number between one and five years. The mortality was lowest between the five- and ten-year period (34

per cent), and highest between one and five years (83 per cent).

3. Tetanus was five times as common in males as in females; this proportion applied also to the cases in children.

4. Tetanus following gunshot and powder wounds had a high mortality (95 per cent); following lacerations, a relatively low mortality (44 per cent), and following puncture wounds a mortality about midway between the two.

5. Cases of tetanus following wounds about the face and head were no more fatal than cases following wounds of the extremities.

6. The incubation period in 56 per cent of the cases was under ten days, the maximum number occurring on the fifth to the seventh day. The mortality in cases having an incubation period under ten days was 84 per cent, whereas in those having an incubation period of from fourteen to twenty-one days it was 25 per cent.

7. The deaths were greatest on the second and third days of the disease and decreased rapidly thereafter. Consequently, if the patient survived the first three days the chances of his ultimate recovery were much greater.

8. The available evidence in these cases as to the therapeutic use of antitetanic antitoxin does not justify any assertion that such use appreciably affects the character of the mortality, whether the serum is given intraspinally or intravenously or by both routes, or whether large doses are given or not, or how early they may be given.

Comment.—The statistics presented do not make a strong case for the value of specific antitetanic serum in the treatment of active cases of tetanus. There is nothing to indicate that the serum does any harm, provided the proper precautions are taken against anaphylaxis. Powder and bullet wounds have a high mortality. If the patient survives the first three days, the prognosis improves materially. Prophylactic inoculations of tetanus antitoxin seem to reduce the mortality markedly if tetanus develops. The age group from five to ten years had a relatively low mortality in this series.

It does not seem warranted to discourage the use of antitetanic antitoxin in the active treatment of tetanus, even though the results are discouraging. From 10,000 to 20,000 units may be given intraspinally, intravenously or intramuscularly (from 30,000 to 60,000 units total daily) for at least three successive days, beginning as soon after the symptoms are noticed as possible. Careful statistics should then be assembled for comparison with the records which have been cited.

The usual antispasmodic and sedative therapy and proper feeding were used in this series of cases.

The high mortality of tetanus in spite of specific therapy emphasizes more strongly than ever the tremendous value of prophylactic inoculations in any case of injury in which tetanus is even remotely liable to develop.

TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association.

Tuberculosis Among the Aged

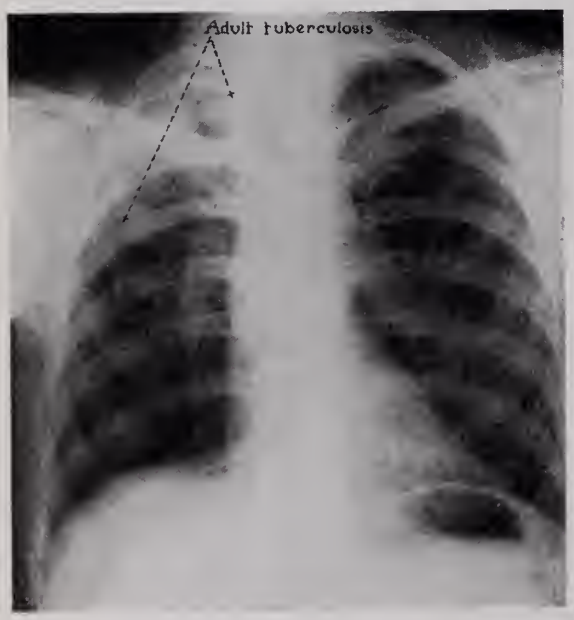
A view quite generally held by the public, and all too often encouraged by physicians, is that tuberculosis does not occur in old age. Osler called attention to the surprising prevalence of the disease in the aged, particularly in institutions. He noted that it is usually latent and runs a slow course, and that the diagnosis may easily be overlooked because of the emphysema and coexisting bronchitis which mask the symptoms of the underlying tuberculosis. In a recent article ("Tuberculosis Among the Aged," *American Review of Tuberculosis*, April, 1930), J. A. Myers and H. R. Anderson epitomized the literature on tuberculosis among older persons and reported 37 cases of frank pulmonary tuberculosis in men and women from fifty to eighty years of age. Abstracts from this article follow:

Tuberculosis in people between the ages of fifty and ninety years may be of all types that are ordinarily seen in the earlier years of life, but the chronic indurative and ulcerative types seem to predominate. Taubert found tuberculous caries, meningitis, and miliary disease, and Schurmann reported a recent primary complex, in addition to an old primary complex, in the lung of a man 72 years old. Fried reports a case 59 years of age with tuberculosis of the lung hilum, which resulted in death.

Symptoms and Physical Signs.—Although anatomically the tuberculous process in the aged may be very extensive, it is clinically mild, and symptoms are frequently entirely absent. Night sweats, fever, and hemoptysis are rare. The patient may experience some dyspnea on exertion. Usually, there is cough of long standing, but expectoration is likely to be absent. In most cases the symptoms are those commonly attributed to emphysema, chronic bronchitis, or cardiac changes.

Physical signs also may be slight or absent; even râles are rarely elicited. Auscultation is difficult because the signs of emphysema overshadow those of tuberculosis. The x-ray is a valuable aid; in fact, it is often the only means of making the diagnosis. The tuberculin test, as Krause says, is the only procedure which, unassisted, can settle a diagnosis of tuberculosis, though only in a negative way. It should be done, therefore, in every case; for, if negative, tuberculosis may be confidently excluded. Tubercle bacilli should be searched for. Goldman and Wolff examined routinely the sputum of institutional patients and found bacilli in two per cent of 339 aged people, none of whom was suspected of having tuberculosis.

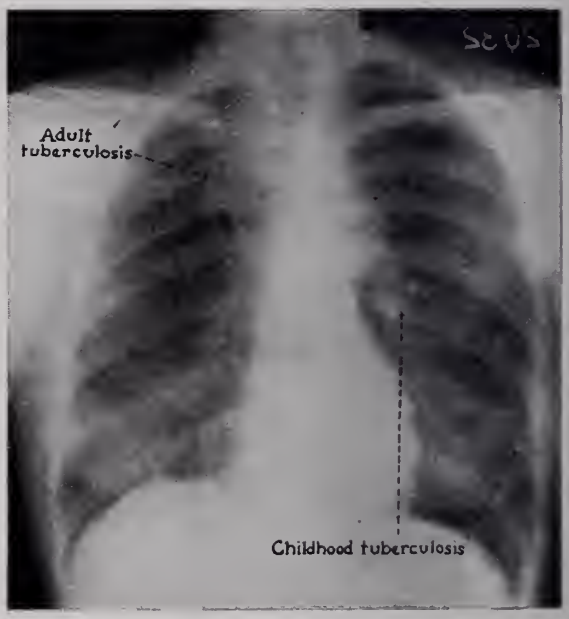
The Dangers.—The aged patient himself has little to fear from the tuberculous condition, but the danger to his associates is great. Numerous cases of children having become infected and diseased through exposure to grandparents or other elderly members of the family are on record. The hazard



Age 70 years. Pulmonary tuberculosis diagnosed soon after attack of pneumonia 45 years ago. Roentgenograph taken July, 1928.

is all the greater because usually tuberculosis is not suspected and the usual precautions are not taken. A case is cited:

In a luxurious home in Paris, father and mother in the best of health and with excellent past histories, three boys, one after the other, almost at the same age, died of tuberculous meningitis. Investigation led to the governess, more than sixty years old and a sufferer from chronic bronchitis, emphysema and asthma, which proved to be a case of torpid, senile tuberculosis. She was detached from the family. Nothing else in the home was changed. Subsequently two children were born and nursed exclusively by the mother. "One is now approaching thirty years; the other is a superb girl of twenty-five years."



Age 63 years. Both childhood and adult types of tuberculosis present.

Treatment.—A radical change in the habits and mode of life of the aged tuberculous person is probably not advisable. Teaching them to prevent the spread of their disease is the most important requirement. If the disease is unilateral, artificial pneumothorax may render the sputum negative and thus make them fairly safe associates.

Summary.—The authors, from their review of literature and studies of their own cases, make the following conclusions:

1. Thirty-seven cases of frank pulmonary tuberculosis in men and women ranging from fifty to eighty years are reported.

2. In nine cases there had been definite exposure to tuberculosis, usually to members of their family in early life.

3. Among the children and grandchildren of these thirty-seven men and women, tuberculosis is known to exist in thirteen cases. It has been impossible to examine more than a few of the children and grandchildren.

4. The symptoms in the aged cases dated from six weeks to approximately forty-five years before we saw the patients. In six cases hemorrhage was the

first symptom, and in five others it has occurred during the course of the disease. Pleurisy was the first symptom in six cases. Cough, frequent colds, bronchitis, and catarrh were the first symptoms in twenty cases.

5. On physical examination, all signs were elicited from those of the most advanced disease to those of a normal chest.

6. Tubercle bacilli were demonstrated in twenty-one cases. We are cognizant of the fact that a negative finding on a few examinations in the remaining cases is of no significance.

7. The cutaneous tuberculin test is of great value in chest work among the aged. Some have not been infected, others have "burned out" their infections; therefore, a negative test is of great significance.

8. X-ray film examination should be made in every case. Without it, many frank cases of tuberculosis and other chest disease will remain undiagnosed.

9. In treatment, such a high degree of conservation is not necessary as is practiced among young adults. When the disease is unilateral and progressive, artificial pneumothorax may be possible. Even extrapleural thoracoplasty may be indicated in the earlier years of this age period.

10. Tuberculosis in the aged is one of the great problems from the standpoint of epidemiology. Its danger lies in its mildness. Many cases are not diagnosed until very late in life, and not a few are first diagnosed at the post-mortem table.

Causyth

A number of German journals have contained more or less laudatory reports regarding Causyth, but these are not considered to present acceptable evidence for the value of the preparation. According to the advertising, Causyth is a "cyclohexatrienpyridinsulphonacid, derived from Pyrazol." The product has not been considered by the Council on Pharmacy and Chemistry, nor has the Mallinckrodt Chemical Works, which exploits it by way of its Canadian branch, "Mallinckrodt Chemical Works, Limited, of Canada," requested the Council to report on it. Apparently no reports have been published in American medical journals which are confirmatory of the German propaganda. A pharmacologist who has given much attention to the action of salicylates and other drugs used in the treatment of rheumatism reviewed seven of the eight papers which were referred to in an advertising circular. He held the evidence to be unsatisfactory and uncritical and no justification for the extravagant claims of the advertising. (*Jour. A. M. A.*, March 1, 1930.)

Undulant Fever Bacterial Vaccine

The Council on Pharmacy and Chemistry reports that the Jensen-Salsbery Laboratories, Inc., have presented Undulant Fever Bacterial Vaccine (Jensen-Salsbery) for consideration by the Council. This product is stated to be a physiologic saline suspension of *Brucella melitensis* (var. *abortus* 75 per cent, and *suis* 25 per cent). From an examination of the published reports, the Council's referee came to the conclusion that this material does not offer adequate evidence for the usefulness of the product and that this form of treatment should be subjected to further controlled clinical trial. The Council voted to publish its preliminary report and to postpone definite action on the question of accepting Undulant Fever Bacterial Vaccine (Jensen-Salsberg) while awaiting the development of further evidence of its therapeutic value. (*Jour. A. M. A.*, April 26, 1930.)

Syrup of Alfemine, et al

Sherman L. Davis, Ph.D., is professor of chemistry and director of nutritional research in the Indiana University School of Dentistry. He is neither a physician nor a dentist. During the past few years Professor Davis has been doing a good deal of lecturing before dental societies. In his talks Professor Davis recommends certain proprietary medicinal products, four in number: "Syrup of Alfemine," "Vicodol," "Caperoid Tablets," and "Vicaperol Capsules." All of these products used to be manufactured by the Ucoline Products Co. of Indianapolis. The manufacture and distribution of these products has been taken over by the Rochester Laboratories, Inc., Rochester, Minn. It appears that the Rochester Laboratories distribute the preparations on a royalty basis, the royalties being turned over to the trustees of Indiana University. Professor Davis does not receive any part of the royalty. Undoubtedly, the newly formed Council on Dental Therapeutics, created by the American Dental Association, will, in due time, investigate and report on the formulas of Professor Davis that are sold under proprietary names. Meanwhile, the entire arrangement constitutes an unusual scheme in its relationship to the practice of either scientific medicine or dentistry. (*Jour. A. M. A.*, April 12, 1930.)

THE WEST VIRGINIA MEDICAL JOURNAL

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¶ Our readers are requested to send marked copies of local newspapers containing matters of interest to members of the medical profession. Name of sender should be given.

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PRESIDENT'S PAGE

FREQUENTLY there are times when it is necessary for a physician to violate the traffic regulations of the community in which he lives. This should never become habitual, and should occur only when the welfare of a patient demands it. In order that all may recognize the doctor's car, it should be marked with a suitable emblem of his calling.

At the White Sulphur Springs meeting, the House of Delegates adopted the automobile emblem of the American Medical Assocation as the official automobile emblem of the West Virginia State Medical Association. It is incumbent upon us to mark our cars accordingly. These emblems are numbered serially and a record of the owner of each is kept. The State Police Department has expressed a willingness to coöperate with us in this matter and to accord cars with our emblem such courtesies as are necessary. Our Executive Secretary will furnish the State Police with a list of the serial numbers of the emblems and owners of the cars bearing them. Those of us who purchased emblems before the White Sulphur Springs meeting should furnish Mr. Savage with our serial numbers, and it is well to furnish the local police authorities with this information as well.

We would urge each member of the State Association to adopt this means of marking his car; it may save trouble and embarrassment, and it is a courtesy to fellow travelers.

Walter E. West

President.

EDITORIAL

Scarcity of Rural Physicians

The Pennsboro *News*, in a recent editorial, gave a hint of approval to the Russian system of medical education. The editorial pertained to the scarcity of physicians in the rural sections of West Virginia, and set forth, in part: "We (the United States) have doubtless the best doctors in the world, and more of them in proportion to our population. However, as in numerous sections of West Virginia, many rural districts are short on medical service. Russia educates physicians and with an iron hand places them where most needed. Tyrannies are not without their virtues."

It is apparent that the Pennsboro *News* is not overly sympathetic toward the profession of medicine. It is also apparent that the above editorial comment was written before any great amount of thought was given to the subject at hand. Suppose, for instance, that we place this country under the heel of Bolshevism for a week, or a month, or a year. First we send the doctors, "with an iron hand," into the rural districts. Then what are we going to do, "with an iron hand," with the editor of the Pennsboro *News*? And where are we going to place the engineers and the architects and the lawyers and the insurance agents, "with an iron hand"? To be sure, the people living in rural districts often have difficulty in securing prompt medical aid. They also often have difficulties in securing running water and in securing ice and current literature and telephone service and things like that. Would the Pennsboro *News*, "with an iron hand," send the plumbers and ice dealers and circulating libraries and telephone exchanges and the like into the rural districts? If not, why the discrimination?

The logical answer is that the discrimination is made because people can wait for running water and ice and literature and the like when they can't wait for medical service. That is true, and that is why we hear so much about the "country doctor" problem. Theoretically, this world should be so arranged that every one could receive prompt medical service, but the fallacy of this theory is encountered when we put the theory into actual practice. The theory is "all wet" because it won't work out.

There are more than two hundred "country doctors" located in the rural sections of West Virginia today, and they are doing a wonderful work; but they are all in districts where they can support themselves with their practice — otherwise they couldn't be there. Suppose we place one of these doctors in a district where he can't support himself. After a short time he begins to deteriorate, to slip down the long hill of inferiority. With no spur to ambition, this result is inevitable. So, by placing our doctor in such a district, we not only bring disaster to a good country doctor, but we also provide the worst kind of medical service for those who are forced to depend upon what we have given them. If they want proper medical attention, they still must go to the larger centers to get it. That's why, idealistic though it is, the plan won't work.

Now, suppose we place all doctors under state control and pay them all the same salary. When salary comes in the door, ambition flies out the window. The day we place the doctors of America on equal salaries, that day will mark the beginning of the decline of the science of medicine. When we remove the spur of ambition the practice of scientific medicine will become a lost art. True, we can then place our doctors in rural sections; but who will have confidence in these doctors? Not the country people, and not the city people, either.

The science of medicine has made almost unbelievable strides within the past quarter-century, and the strides have been as great or greater in America than in any other country. The rural sections, contrary to popular belief, are supporting more doctors than ever before. One by one the diseases of mankind are being conquered and subdued, and week by week medical care and service is becoming more readily available for our people in the rural districts. This is no time to talk of Russian systems—of Communism. This is the time to look with alarm upon the disastrous experiments in medical economy that have been tried out in Continental Europe and to give thanks that our own system of medical practice is still flying the brave flag of independence after one hundred and fifty years of achievement.

Dr. John T. Sharp

The Kanawha Medical Society lost one of its best-known and best-liked members on June 29, when Dr. John T. Sharp died of heart failure at the age of 58 years. He had been a practicing physician in Charleston for the past twenty-five years and was one of the most beloved members of the profession there. A kindly personality and a strict adherence to the ethics of his profession won for Dr. Sharp the friendship and esteem of practically

all of his fellow practitioners with whom he came in contact.

Dr. Sharp was born in Greenbrier county and was graduated from the Medical College of Virginia at Richmond, later taking post-graduate work at the New York Polyclinic Hospital. He came to Charleston in 1905, associating first with Dr. V. T. Churchman and later with Dr. W. S. Shepherd and Dr. M. L. Dillon. He was a member of the Masonic order, which body had charge of the funeral services. Dr. Sharp is survived by his wife and one brother. He leaves a host of friends and admirers throughout the southern part of West Virginia to mourn his death.

The Coming Primary Election

On August 5, 1930, the good people of West Virginia will go to the polls to determine who shall and who shall not be the candidates for the various offices to be voted upon at the general election in November. The medical profession is primarily interested in those candidates who are seeking seats in the West Virginia legislature. Now is the time for all members of the Association to study the list of candidates for the state senate and house of delegates, to talk to these candidates wherever possible, and to decide to cast their ballots for those candidates who are most likely to support the principles of scientific medicine when the legislature convenes next January. If we are able to select the proper candidates on August 5, we will not be confronted with the problem of partisan politics at the general election in November.

The important measures expected to come up next January include a bill for semi-compulsory automobile insurance, a bill making it a misdemeanor for any person to "jump" a hospital bill, and a bill to place all branches of the healing art under the control of the state board of medical examiners. These are the measures that the Association hopes to have enacted into law.

There will also be introduced next January a number of measures directed against the medical practict act of West Virginia. One of these measures will attempt to sanction the payment of fees to all persons who claim to heal by faith alone. Another will attempt to eliminate the present academic requirements for chiropractors. Still another will attempt to license third-year medical students who agree to practice medicine in rural districts. These are the measures which, if passed, will lower the standards for the practice of medicine in West Virginia; hence they are the measures that we must fight when the legislature convenes.

A little missionary work with your legislative candidates now will do more good than a dozen telegrams next January. Talk to your candidates on these problems and find out where they stand. Give them our side of the story and ask for their support. The main idea is to talk to them before the primary and to let them know that the West Virginia State Medical Association is on the job.

PUBLIC HEALTH

Work of National Leprosarium

A report recently submitted indicates that during the last fiscal year, at the National Home for Lepers maintained by the Public Health Service at Carville, Louisiana, 49 new patients were admitted. There was an average of slightly more than 300 patients in the institution during the year. It is encouraging to note that 19 patients were released as no longer a menace to the public health. Six additional patients complied with the requirements for parole, but, owing to their deformities and disfigurements which could not be cured, these patients elected to remain in the hospital rather than be subjected to the hardships and humiliations which are frequently the portion of many paroled lepers.

The nativity of the various patients of the leprosarium indicates that Louisiana and Florida had the largest number of any of the states. There were 10 patients who were born in Ohio. Of the patients admitted during the year, California leads with 15, Louisiana follows next with 11, Texas with 6, and Florida with 5.

Chaulmoogra oil, by mouth, was used as routine treatment in 137 patients, the dosage ranging from 9 to 375 drops daily. One hundred and eighty patients are taking hypodermic injections of a special derivative of chaulmoogra oil. Dental work has been continued as necessary. Supplementary treatment by means of physiotherapy and special light treatments are also given.

Influenza Mortality in Six Epidemics

The Public Health Service has recently completed a study of influenza mortality in six epidemics. This study is based on weekly death rates from respiratory diseases recorded as influenza and pneumonia in about ninety-five cities of the United States during the period 1920–1929.

From January 1, 1920, to the middle of 1929,

six epidemics of more or less national extent have occurred in the United States—1920, 1922, 1923, 926, spring of 1928, and the winter of 1928-29. Judging by the rates in the ninety-five cities, which seem to be only slightly higher than rates for the country as a whole, these six epidemics caused, in excess of the normal or expected seasonal mortality from respiratory diseases recorded as influenza and pneumonia, approximately 250,000 deaths in the country as a whole—a total of nearly one-half as many deaths as occurred in the United States during the great pandemic of 1918-19. About one-fifth of these deaths, or 50,000, occurred during the recent epidemic of the winter of 1928-29, and two-fifths, or 100,000, occurred during the sharp epidemic of the early months of 1920.

Although these six epidemics were more or less nation-wide in extent, the various sections of the United States were by no means equally affected. In the instance of several of the smaller epidemics there appeared to be whole sections of the country that were not affected. On the other hand, certain sections of the country experienced fairly sharp epidemics in years when the rates for the country as a whole did not indicate any influenza-pneumonia deaths in excess of the median weekly rates. An example of this is an epidemic in the West South Central cities which occurred in the early months of 1925—a year when the remainder of the country appeared to be relatively free from influenza.

The point of origin and direction of progress of these six epidemics varies a great deal. Nearly every one of them arose in a different section of the country. The 1920 epidemic arose in the East North Central section and progressed very rapidly to all other sections of the country. The 1922 epidemic arose in the East, probably in the Middle Atlantic section, and the 1923 epidemic arose in the East South Central section. The 1926 and the 1928-29 epidemics arose on the West Coast, and the little epidemic of the spring of 1928 probably arose in the Mountain or West South Central section.

The rate of progress across the country varies a great deal in the different epidemics. Considering the ninety-five cities as a whole, however, there is more uniformity in the length of the epidemic. In 1920 the central half of the deaths occurred in a period of about sixteen days. In the epidemics of 1928-29, 1922, and 1926, the central half of the deaths occurred in periods of 21, 22, and 23 days, respectively. In the small epidemic of the spring of 1928 the period was 27 days, and in the epidemic of 1923 the period was 30 days. The 1923 epidemic seems to show the least time-concentration of any of these recent outbreaks. In the case of all the other epidemics the excess rate rose and fell at about the same rate, but in 1923 the rise to the peak was considerably slower than the fall of the curve to the normal level again.

OBITUARY

John T. Sharp, M.D.

Dr. John T. Sharp, fifty-eight years of age and for the past twenty-five years a practicing physician in Charleston, died from heart trouble at his home on the afternoon of June 29, 1930. Dr. Sharp was a native of Greenbrier county and was graduated in 1900 from the University College of Medicine, Richmond, Virginia. Later he did post-graduate work in the New York Polyclinic Hospital.

After coming to Charleston in 1905, Dr. Sharp associated with Dr. V. T. Churchman. About four years ago he joined with Dr. W. S. Shepherd and Dr. M. L. Dillon in the medical firm of Shepherd and Dillon, where he remained until his death. He is survived by his wife and one brother, George Sharp, of Crawley, W. Va. Funeral services, in charge of the Masonic order, were held from the residence on July 1 and interment was made in the Spring Hill cemetery at Charleston.

MEDICO-LEGAL

Forced Operation

Justice Peter B. Hanson, of the Brooklyn, N. Y., children's court, established a recent ruling of major interest to the medical profession when he forced the mother of a thirteen-year-old boy to permit her son to undergo a life-saving operation. The ruling laid down by Justice Hanson was warmly approved by Dr. Edward Fleming, president of the Queen's County Medical Society. In calling the case to the attention of the WEST VIRGINIA MEDICAL JOURNAL, Dr. W. S. Magill, of Morgantown, wrote: "The enclosed legal decision may arouse many of us to the fuller realization of our responsibility to see that the patient has every care that is needful, regardless of surrounding relatives and friends. . . . The physician or surgeon, once consulted, must see that what is manifestly necessary in any case is thoroughly and promptly put into execution."

The report of the ruling by Justice Hanson

quoted herewith as published in the July 5 issue of the New York *Times*:

"The ruling in which Justice Peter B. Hanson, of the Brooklyn Children's Court, forced a mother to permit her son to undergo a life-saving operation was strongly approved yesterday by Dr. Edward Fleming, president of the Queens County Medical Society.

"The court's decision revealed that a 13-year-old boy's life had been saved by an imperative operation which his widowed mother had refused to allow because she felt she had no right to complain 'if the Lord called upon her to give back her boy to Him.'

"Justice Hanson invoked an old statute which declared a child whose parents refused it necessary medical or surgical aid in spite of necessity was legally 'neglected.'

"The boy was operated on in a Brooklyn hospital and is now said to be on his way to recovery. During the trial five doctors had testified that the operation was imperative.

" 'The ruling obviously was the only rational one possible from a medical and sociological standpoint,' Dr. Fleming said. 'The mother, a lay person, had no scientific nor medical knowledge. The five doctors who testified naturally knew more about the necessity of the operation than the mother. She was apparently ignorant of the actualities of the situation and in her ignorance almost lost her son's life. She was laboring under a misapprehension.

" 'Justice Hanson is to be congratulated. The subsequent outcome proved the justification of his decision. It is hoped that this case will set a precedent upon which future similar cases will be decided.

" 'Lay persons with no training such as the highly trained physician of today possesses can hardly be in a position to determine what can and what can not be accomplished by surgery.' "

COUNTY SOCIETY NEWS

Mercer County

There was a meeting of the Mercer County Medical Society on Thursday, June 19, 1930, held in Bluefield, with fifteen members and three visitors present. The following papers were read:

"Nasal Accessory Sinus Infections," by Dr. W. E. Dickerson, of Princeton, W. Va. Dr. Dickerson presented a very complete, commonsense discussion of this subject, especially stressing conservatism. He also stressed the normal physiology of the mucous membranes of the nose, and decried overzealousness in rushing in for operative procedures. In other words, give nature a chance. This paper was ably discussed by Dr. Charles St. Clair, who heartily concurred with Dr. Dickerson and stressed even more conservatism.

Another paper was read by Dr. Huston St. Clair, Bluefield, W. Va., on "The Normal Band and Line Polynuclear Neutrophile Count: Its Value as a Diagnostic Aid." This paper was originally worked up by Dr. St. Clair and his associates at the Pennsylvania Hospital in Philadelphia. This count is a simplification of Arneth's method of classification of the neutrophilic leukocytes. Dr. St. Clair divides them into two classes: Class 1 includes all the polymorphonuclear neutrophiles which have not divided sufficiently to have as many as two lobes; and Class 2 includes the remaining four classes. They attempt to establish a normal count by recording 100 counts on normal individuals and by reducing the table for normals as made by Cook and Ponder to normal as classed by them. They furthermore included a number of counts made on cases of infections in which the usual total and differential counts were normal, and conclude that the most delicate method of studying the reaction of the bone marrow in infections of all types is the estimation of the young forms of polynuclear leukocytes. This count is especially valuable in the diagnosis of cryptic infections of subacute or chronic types where there is no increase in the total leukocyte count. It may add additional presumptive evidence in cases of malingering and hysteria masquerading as organic diseases. Its value in prognosis is yet to be established. In profoundly toxic cases with a normal total count or a leukopenia, the agonized efforts of the bone marrow can be determined only by study of the character of the nucleus of the leukocyte. The upper limit of a normal young polynuclear count is in the neighborhood of 16% of cells. The average count in 190 presumably normal adults is approximately 9%. An increased percentage of young polynuclear leukocytes may indicate the existence of infection, even though the total number of leukocytes is not increased.

R. R. STUART, Secretary.

Central West Virginia

The Central West Virginia Medical Society held its third quarterly meeting of 1930 at Webster Springs on Wednesday, July 16. About fifty people were in attendance, including the members of the Central West Virginia Medical Society, the Lewis County Medical Society, the Woman's Auxiliary of

each of these societies, and their friends. Immediately following the business meeting, the scientific program was offered.

Dr. Walter E. Vest, president of the West Virginia State Medical Association, of Huntington, gave a short and interesting talk on "The Importance of Attendance at Medical Meetings."

Dr. W. B. Morrison, of Columbus, Ohio, gave a very interesting and illustrated essay on "Recent Advances in the Treatment of Fractures," using lantern-slide demonstrations.

Dr. H. A. Baughn, of Columbus, Ohio, chose as the subject of his paper, "Hypertension: Etiology, Diagnosis, Prognosis, and Treatment."

The discussion which followed the reading of these papers showed the interest and appreciation of the society in having Drs. Vest, Morrison, and Baughn as speakers.

About 10 P.M. a very sumptuous banquet was served in the dining room of the Oakland Hotel to thirty-five guests.

Those present were: Dr. Walter E. Vest, Huntington; Mr. Joe W. Savage, Charleston; Dr. H. A. Baughn and Dr. W. B. Morrison, Columbus, Ohio; Dr. and Mrs. S. P. Allen, Webster Springs; Dr. and Mrs. O. L. Hudkins, Weston; Dr. and Mrs. W. P. King, Weston; Dr. and Mrs. Lester Miller, Flatwoods; Dr. and Mrs. E. S. Frame, Fenwick; Dr. and Mrs. F. H. Brown, Summersville; Dr. and Mrs. J. B. Dodrill, Webster Springs; Dr. and Mrs. J. Clyde McNeil, Sutton; Dr. and Mrs. M. T. Morrison, Sutton; Dr. and Mrs. B. S. Rankin, Kingwood; Dr. and Mrs. C. C. Carson, Gassaway; Dr. and Mrs. R. J. Condry, Elkins; Dr. H. S. Brown, Sutton; Dr. A. L. Jensen, Richwood; Dr. H. M. Andrew, Weston; Dr. D. P. Kessler, Weston; Dr. E. T. W. Hall, Weston; Dr. Hugh Dunn, Richwood; Dr. H. V. Thomas, Buckhannon; Miss Clara Marple, Flatwoods; Miss Mary Helen Thompson, Gassaway; Miss Leah Squires, Sutton; Miss Ernestine Erwin, Webster Springs; Mrs. Jean T. Dillon, Charleston; Mrs. Henry Dils, Parkersburg; Mrs. H. S. Wolfe, Kingwood; Mr. and Mrs. C. D. Singleton, Los Angeles, Cal.; Mr. H. B. Brown, Sutton, and Mr. R. M. Hall, Weston.

C. C. CARSON, Secretary.

Monongalia-Preston

A joint meeting of the Monongalia and Preston county medical societies was held at Hopemont on the evening of July 15, 1930, with a most excellent turnout from the two county organizations. The meeting got under way at 7:30 o'clock P.M. and was opened with the scientific program, presented by Dr. C. H. Benson, instructor in medicine at the Ohio State University College of Medicine, Columbus. Dr. Benson talked on "The Early Diagnosis of Pulmonary Tuberculosis," which was ably discussed by many of the members in attendance.

Following the scientific program a luncheon was served at the Hopemont Sanatorium, which was greatly enjoyed. The joint meetings of the Monongalia and Preston county medical societies are coming to be annual affairs of considerable importance and are always attended by a large group from both counties.

Raleigh County

The regular monthly meeting of the Raleigh County Medical Society was held on the evening of June 19 at the Black Knight Country Club, Beckley, with twenty-three members and two visitors in attendance. A dinner was served to those present by the club, after which the meeting was called to order by Dr. A. U. Tieche, president.

The first order of business was a report from a committee appointed in May to consider the advisability of securing two Red Cross nurses for field duty in Raleigh county. The committee, consisting of Dr. K. M. Jarrell, Dr. M. C. Banks, and Dr. L. D. Hill, reported unfavorably on this matter and, on motion of Dr. L. G. Houser, the report of the committee was accepted and confirmed.

Dr. K. M. Jarrell opened the scientific program with a paper on "Pyelitis in Infants and Children," which was very interesting and instructive. This paper was discussed by Dr. W. W. Koiner, Dr. Hodge, and Dr. L. E. Shrewsbury.

Another interesting paper, showing the result of much work and thought, was read by Dr. George W. Johnson, on "Puerperal Infection." This paper was ably discussed by Dr. Hundley and Dr. Dupuy. Following the presentation of the two papers, a motion picture was shown by a representative of the Petrolagar Company, illustrating the anatomy of the abdominal wall and viscera.

Dr. Tieche appointed Dr. W. H. Cunningham, Dr. I. M. Fisher, Dr. J. E. McKenzie, Dr. L. E. Shrewsbury, Dr. E. S. Dupuy, and Dr. A. F. Murphy to each present a paper or case report of their own selection for the July meeting, such paper to be of not over ten minutes' reading length.

W. W. KOINER, Secretary.

FROM OTHER JOURNALS

Psychology of the Healing of Mrs. McPherson

Before the dawn of scientific medicine, under the school of Hippocrates, people worshiped the God of Medicine, Æsculapius. This form of worship was conducted by a brotherhood, in temples, and they received their power to cure the sick and afflicted from their god, Æsculapius. Their mode of treatment no doubt came down through the centuries, until true medicine was born under the Hippocratic teaching. It naturally had many advocates, as people always have a tendency to follow mobs, and mob psychology has much to do in influencing mind and matter in every line of business, religion, politics, and in the disastrous runs on banks.

The temples dedicated to Æsculapius for teaching the cure of illness were usually placed in the best environment and attracted individuals. They were no doubt conducted along lines very similar to such institutions today that are under the teachings of Mrs. Eddy, Aimee McPherson, and many others too numerous to mention. The Old and New Testament, with many other forms of worship, demonstrate their teachings by curing the sick and afflicted of every form of disease that flesh is heir to. Such healings are regarded as miracles, and those of us who are Protestants have been taught from infancy by our mothers and fathers, around the family hearthstone, to believe such teachings by faith alone, not by science or reasoning. Most cases, treated or untreated, get well by the reconstruction of the vital powers within. There is a natural mortality in diseases of about five per cent. Regular medicine only claims to cure about five per cent of the cases, so any form of treatment is able to boast of many cures. In fact, ninety per cent will recover without any form of treatment.

Since time immemorial the healing art has been practiced by the unskilled medical man. In other words, the healing has been done by some individual who has gathered around him numerous disciples, or adherents, enabling him to successfully create an impression with mob psychology.

We have examples in the old form of civilization reaching through China, India, and Egypt. Within our own day our advanced civilization is full of healers. Last, but not least, is Mrs. Aimee McPherson, whose trials and tribulations have almost equaled those of Jesus of Nazareth. It has well been said in the Scriptures that those the Lord loveth He chastises. Mrs. McPherson claims to have cured about eighty per cent of those who believed in her. Since the time of Christ it has been definitely demonstrated—as in the case of Lot's wife—that to be cured you must have faith and belief.

The various cults have no definite theory as to their healing except belief, and the basis of cure is "suggestion," which is a powerful factor in the accomplishment of the various activities of life, as well as in sickness. In order to understand the power of suggestion and its influence on disease and health (it works both ways, as a two-edged sword), it is well for us to understand the simple laws of psychology. Our nervous system is made up of voluntary and involuntary nerves. The involuntary nerves control the various functions of the body. The voluntary nerves have control over the sympathetic system, which in turn controls digestion, assimilation, blood-pressure, and many of the more intricate functions of our general makeup.

The psychologists divide our mental faculties into two minds: the conscious and the subconscious. The conscious mind carries on its function through the brain and arrives at the analysis of any proposition by reasoning. The subconscious mind is independent of the conscious mind. It presides over the various organs of the body through the sympathetic nervous system, arrives at conclusions by intuition, and is governed by the law of suggestion, which is usually transmitted to it by the conscious mind. The subconscious mind is especially well developed in the female sex. It is through the subconscious mind that we dream, that we walk in our sleep, that we awaken at a certain hour in the morning. Our last thought in the conscious mind before going to sleep is that we wish to awaken at a certain hour, and this is so firmly impressed upon our subconscious mind that it never fails us.

Mysticism, and the various cults of India, are all developed on the science of the subconscious mind. They believe that the subconscious mind can leave the body and gather information for the benefit of the conscious mind. When both minds are normal, naturally the subconscious is more or less under control of the conscious mind. In a disordered condition such as somnambulism, or possibly in hypnotism, the subconscious mind controls the conscious, and it is under such conditions that much study has been made of the workings of the subconscious mind.

There is no question but that there is a dual condition of every mind. We have all had the experience of pondering over difficult problems at night, then finding them clearly solved the next morning.

The explanation we know not. The sleep-walker can safely perform the most dangerous feats without any knowledge in the conscious mind. When he wakes up the next morning he knows nothing of his experiences while asleep. His mind was closed to any form of recognition by the brain.

Confidence, or suggestion, is the great factor today that controls our destiny. It is used in every line of business. It matters not whether you go to the physician, the attorney, the banker, the salesman or the clergy—you have confidence in them, you give them the facts in the case, and you feel that you have done the best you can do in the matter. You are more or less relieved of the responsibility and are prepared to take the consequences. Each one of those confidences is built up on the law of suggestion.

All cults—it matters not which—if they stand out to cure disease, have a big following. Some do their healing under one suggestion and some another. Emilie Coué taught suggestion in *"I am getting better and better every day—better and better in every way"* as his slogan. With these words he impressed his suggestion on the subconscious mind, for the better. Many Christian churches in the country teach that all healing is divine and they cure their patients by prayer. The autosuggestion is made in that way. Many diseases may be caused as well as cured by suggestion. Such diseases as catalepsy, hysteria, neurasthenia, are often due to suggestion and might be attributed to action of the subconscious mind. Suggestion can either produce or cure the disease, as the case may be. Then the greatest force in the body is suggestion, or autosuggestion, and is used as a therapeutic agent.

The power of suggestion is thoroughly demonstrated at a football game, a lynching, a prizefight, a political gathering, or a congregation, where there is an extra amount of excitement. The people, under such conditions, get what might be terme "mob psychology," and it was under similar conditions in Aimee McPherson's church that she claimed such marvelous cures. In other words, the thought that she carried to them *en masse* became contagious. Each member of her congregation lost more or less of his or her individuality and was under subconscious control. It matters not what the belief is, provided they ponder on some special thought which influences the subconscious mind, whether it is for the relief of disease or otherwise, the influence can be felt and the psychologist can naturally see good.

Christian Science is a religion built on the fundamental belief that there is no disease. They do not recogniz eanything opposite to health. They claim man was born the image of God in perfection and can not be otherwise. Their disciples preach nothing but health and that suggestion is naturally carried to the subconscious mind. Under the teachings of Mrs. Eddy the whole superstructure is built on suggestion.

When visiting the hot springs in Arkansas your patient is told that it is a specific for lues. The healing waters of Lourdes in France has its thousands of cures among every class. Many individuals have the magnetic wand in their hands. All forms of relics and images are on the altars of Asia to cure this or that disease. History is filled with various methods of cure, and all of them are based on faith and suggestion, which are always present in every *ism* that is taught.

Faith and suggestion, based on our knowledge of psychology, is the underlying principle on which all of these various agencies are grounded.—A. W. MORTON, A.M., M.D., LL.D., in *The Compend of Medicine and Surgery*.

GENERAL NEWS

John Phillips Memorial Prize

The American College of Physicians announces the John Phillips Memorial Prize of $1,500, to be awarded for the most meritorious contribution in internal medicine and sciences contributing thereto, under the following conditions:

1. The contribution must be submitted in the form of a thesis or dissertation based upon published or unpublished original work.

2. It must be mailed to the executive secretary of the American College of Physicians on or before August 31, 1930.

3. The thesis or dissertation must be in the English language, in triplicate, in typewritten or printed form, and the work upon which it is based must have been done in whole or in part in the United States or Canada.

4. The recipient of the prize would be expected to read the essay at the next annual meeting of the College, after which he would be officially presented with the prize by the president.

5. The College reserves the right to make no award of the prize if a sufficiently meritorious piece of work has not been received.

6. The announcement of the prizewinner will be made not later than two months before the annual meeting.

All contributions should be sent to the American College of Physicians, E. R. Loveland, executive secretary, 133-135 S. 36th Street, Philadelphia, Pa.

Midwives Licensed

License to practice midwifery in West Virginia for the year 1930 has been granted to 317 persons to date by the state health department. These licenses, issued by the state health commissioner, are granted only on recommendation of a local physician for the period of one year, from January to January, and must be renewed each year.

Under the law, which was passed by the legislature of 1925, applicants must be over twenty-one years of age, must be able to read and write, must be clean in appearance and general habits, free from communicable diseases, and must possess a diploma from a recognized school of midwifery or have attended five mothers and newborn babies under the direction of a licensed physician. Every midwife is required to put one or two drops of a one per cent solution of silver nitrate in the eyes of the newborn baby immediately after birth. This solution is furnished free by the state health department. The law also requires, on penalty of a fine, that all births be reported to the local registrar within ten days after birth.

Under the revised code which goes into effect January 1, 1931, a fine of not less than twenty-five dollars nor more than one hundred dollars may be imposed on any one other than a physician or licensed midwife who is found to be practicing midwifery in the state. This does not prevent a neighbor or friend from rendering assistance in an emergency, but rather seeks to safeguard the lives of mothers and infants by excluding from practice the ignorant carcless midwife who, through insanitary measures, would endanger life.

Good roads which have made medical service more easily secured, and a more general knowledge of the principles of health, are decreasing the employment of midwives in West Virginia. In many instances midwives are employed only in the capacity of a nurse or in emergencies.

Civil Service Vacancy

The United States Civil Service Commission announces an open competitive examination for the position of senior medical officer (psychiatry). Applications for senior medical officer must be on file with the Civil Service Commission at Washington, D. C., not later than August 27, 1930.

The examination is to fill a vacancy in the United States Public Health Service for duty at the United States Penitentiary, Leavenworth, Kansas, and vacancies occurring in positions requiring similar qualifications throughout the United States. The entrance salaries range from $4,600 to $5,200 a year. Higher-salaried positions are filled through promotion.

The duties are, under the administrative supervision of the chief medical officer, to have charge of the psychiatric service of the federal prison, the duties involving the psychiatric classification of prisoners incident to admission, parole, and discharge; the care and treatment of mental patients, the instruction of subordinate officers and employees, expert consultation, and the performance of related duties as assigned.

Competitors will not be required to report for written examination, but will be rated on their education, training, and experience. Full information may be obtained from the United States Civil Service Commission at Washington, D. C., or the secretary of the United States Civil Service Board of Examiners at the post office or customhouse in any city.

Hoge and Walker Appointed

Dr. Albert H. Hoge, of Bluefield, and Dr. R. H. Walker, of Charleston, are the two new members of the West Virginia Public Health Council, having been appointed by Governor Conley to take office on July 1, 1930. They have taken the places vacated by Dr. J. L. Pyle, of Chester, and Dr. W. M. Babb, of Keyser, whose terms expired on the first day of last month. Dr. Pyle had served on the council since 1911, and Dr. Babb had served for the past ten years.

Both Dr. Hoge and Dr. Walker are well known to the medical profession throughout the state. They have both been at the head of their respective county societies, Mercer and Kanawha, and both have taken an active part in the work of the West Virginia State Medical Association. Dr. Hoge was elected first vice-president of the Association at White Sulphur Springs in May. Dr. Walker has served for several years on a number of important Association committees. Dr. Walker and Dr. Hoge are both unusually well qualified for the appointments they have accepted from Governor Conley.

Crippled Children's Work

At the three diagnostic clinics for crippled children held during the past few weeks, a total of 269 children were examined, their cases diagnosed, and recommendations made as to the treatment necessary to help in overcoming their conditions.

This brings the total number of crippled children in the state examined since December 15 in clinics sponsored by the West Virginia Crippled Children's Council and other organizations to 1,134. These clinics have been held in centrally located places under the auspices of local organizations, the executive secretary of the Crippled Children's Council, Mrs. Jean T. Dillon, working out the organization details and the state orthopedic specialists making the examinations and diagnoses. Following examination, the case of each crippled child is discussed with the parent or guardian and plans devised for early treatment. In cases where the families are unable to finance the necessary treatment, social histories are taken and plans made for the use of the funds appropriated by the last legislature. As these funds are not large, only a limited number of cases can be provided for. To date, hospitalization has been authorized for 177 cases.

Where the county allotment of state funds has been exhausted, financial aid is given needy cases either by the West Virginia Society for Crippled Children from funds raised in the membership campaign or by Shriners or local service and civic clubs. The Crippled Children's Council and affiliated agencies are endeavoring to see that means are provided to care for every crippled child in the state. They feel that such a program is not only solving the future needs of the child by placing it in a position to become self-supporting, but is also relieving the state of a dependent and lessening the taxpayer's burden.

The last three clinics held have been in Charleston, for the crippled children of Kanawha, Boone, Putnam, Clay, and Lincoln counties; in Spencer, for Roane, Calhoun, and Gilmer counties; and in Parsons for Tucker and Randolph counties. This brings the total number of counties offered diagnostic service to 41 to date. A clinic will be held at Camden-on-Gauley on July 17 for the counties of Webster, Braxton, and Nicholas.

Committee on Medical Care

At the spring meeting of the Committee on the Cost of Medical Care, held in Washington on May 2–3, 1930, a special committee of private practitioners was appointed to consider the relation of the committee to the private practitioners of the country. This committee, composed of the undersigned members, now submits the following statement for the information of these practitioners on the scope and aim of the committee's work.

It was clearly recognized by all present at the spring meeting that the committee has undertaken a program of studies which, in its scope, goes far beyond that part of the cost of medical care which physicians provide. The expense of several other kinds of service now looms large in the total cost of many illnesses. In addition, special emphasis was given at the meeting to the question of the adequacy of the various services available in a community. Finally, the committee adopted a statement of three fundamental principles proposed by the chairman, which should go a long way toward reassuring those who have been apprehensive regarding the nature of the committee's ultimate recommendations.

The committee is interested in far more than the physician's bill, which, in many instances, is considerably less than half the total cost of illness. Hospital care, nursing, dentistry, laboratory examinations, and medicines often involve considerable expense, as is clearly shown by several of the committee's studies which are now being completed or have already been reported upon. In one middle-western county recently surveyed, the expenditures for various kinds of medicines constituted over one-third of the total expense for medical care, and were twenty per cent greater than the costs of physicians' services. It is also becoming apparent that a great deal of money is being spent for useless medicine and for various irregular forms of treatment which do the patient no good or which may result in positive harm.

In order to indicate clearly the broad scope of the committee's work, it was decided at the spring meeting to make a slight change in its name. The word *cost* is to be changed to *costs*. The complete name of the committee, with subtitle, will henceforth be "The Committee on the Costs of Medical Care—Organized to Study the Economic Aspects of the Prevention and the Care of Sickness, including the Adequacy, Availability, and Compensation of the Persons and Agencies Concerned."

One vital problem before this committee, declared a prominent physician member at the recent meeting, is the determination of what is reasonably adequate care. In many cases of obscure disorders and serious illness, expensive facilities are essential.

Presumably, there must be available in the community well-trained general practitioners, certain specialists, dentists, nurses, hospitals, and health agencies—trained and well equipped to do their part in providing all the care that the individual may need. A plan of the executive committee, to conduct a study to determine standards of adequate medical care, under the general direction of some well-known, competent physician, and with the assistance of a committee of fifteen or twenty other physicians, was heartily endorsed at the meeting of the general committee.

The aim of the committee is to study the problem described by Dr. Olin West, the secretary of the American Medical Association, as the one great outstanding problem before the medical profession today. This, he says, is that involved in "the delivery of adequate, scientific medical care to all the people, rich and poor, at a cost which can be reasonably met by them in their respective stations in life." The committee is endeavoring to establish a foundation of facts which have an important bearing upon this problem. On the basis of these facts, it will propose recommendations for the provision of adequate and efficient therapeutic and preventive service for all the people at a reasonable cost to the individual, which, at the same time, will provide physicians, dentists, nurses, hospitals, and other agents assurance of adequate return. This is not a new statement of aim. Recent discussion, however, has given new emphasis to certain aspects of it. There are important items in the cost of sickness other than the physician's bill; and the adequacy of the service provided must be considered. The program of studies is a comprehensive one. It deals with questions of supply, demand, distribution, and costs of all kinds of services, both preventive and curative; the relation of these costs to other expenses; the return accruing to the practitioners and various agents furnishing medical services; and especially will it seek to determine what standards of adequacy may reasonably be expected.

Dr. Ray Lyman Wilbur, chairman of the committee, proposed at the meeting May 2 a statement of three fundamental principles for the consideration of the committee. This statement was referred to each of four subcommittees which held sessions during the two-day meeting. The entire committee, at its last session May 3, adopted with a few verbal changes the three principles. These will be of special interest to physicians and dentists. They follow:

1. *The personal relation between physician and patient must be preserved in any effective system of medical service.*

Medical service is, and doubtless by its very nature must remain, a distinctly personal service. Even in this age of standardized commodities for the table, ready-to-wear clothing, and interchangeable spare parts for all types of machines, there has been no plan suggested for the reduction of medical diagnosis and treatment to basic units which can be ordered from traveling salesmen or acquired through correspondence courses. The physician must see his patient and see him, in many cases, over an extended period of time, if the diagnosis and treatment are to achieve the greatest possible accuracy and efficiency. There is no substitute for personal observation.

Man is not a standardized machine, and each individual reacts to the conditions of life in a manner in some respects unique. In the treatment of disease this individual variation is a factor of great significance, and can receive due consideration only when the practitioner has known the patient for a considerable time and maintains a personal relation with the patient.

2. *The concept of medical service of the community should include a systematic and intensive use of preventive measures in private practice and effective support of preventive measures in public health work.*

The cost of adequate curative treatment is now high and may continue to increase as expensive procedures resulting from scientific progress become more widely used. Sickness, in addition, involves other personal and social costs, some of which can not be measured in monetary terms.

The outstanding achievements in scientific medicine have been made in the preventive rather than the curative field. Knowledge now available for the control of malaria, tuberculosis, smallpox, diphtheria, pellagra, typhoid fever, hookworm disease, and goiter, if effectively applied, would make unnecessary a considerable proportion of the present expense for the cure of sickness.

3. *The medical service of a community should include the necessary facilities for adequate diagnosis and treatment.*

From the standpoint of effective diagnosis, many diseases, such as tuberculosis, can not be recognized promptly in their early stages without the aid of elaborate technical equipment. From the standpoint of adequate therapy, if the best of modern technique is not immediately available, complete cures are either delayed or rendered impossible of attainment.

To cite a specific illustration of the improvement of modern therapeutic procedures over those of ten years ago, the time required for treatment of fractures of the hip, and the percentage of permanent invalidity resulting from that injury, have each been reduced by more than half.

We can not be content with anything except the best possible service that modern science can provide, and it is therefore imperative that modern scientific equipment for the diagnosis and treatment of disease be available to the practitioners of medicine in every community.

SPECIAL COMMITTEE OF PRIVATE PRACTITIONERS:

Stewart R. Roberts, M.D., Chairman.

Walter P. Bowers, M.D., A. C. Christie, M.D., Haven Emerson, M.D., George E. Follansbee, M.D., M. L. Harris, M.D., J. Shelton Horsley, M.D., Kirby S. Howlett, M.D., Arthur C. Morgan, M.D., Herbert E. Phillips, D.D.S., C. E. Rudolph, D.D.S., Richard M. Smith, M.D., N. B. Van Etten, M.D.

Van Ard Sanatorium

The Van Ard Sanatorium, Inc., does a quack rheumatism-cure business from an old brick residence on the South Side of Chicago. It is an Illinois corporation with an authorized capital of $10,000. Its officers are listed as J. B. Creevy, president; H. L. Cassel, secretary. They are the same individuals who are, or were, connected with the "Cass Treatment for Rheumatism." The impression is given, in the Van Ard advertising, that Charles J. Cahill, who is connected with the business of the firm, has special knowledge of the treatment of rheumatism. Needless to say, Cahill's name is unknown to scientific medicine. Just as in the Cass Laboratories fake, the letters were signed "Harvey L. Cass" (a person who didn't exist), so in the Van Ard Sanatorium quackery most of the letters are signed "J. B. Crenon, Secretary." And just as "Harvey L. Cass" was really Harvey L. Cassel, so, doubtless, "J. B. Crenon" is Joseph B. Creevy! Reports were received from California of three deaths in which the principal autopsy finding was an extreme degree of atrophy of the liver. The reports brought out that two of the women had been taking the Van Ard "treatment," while the third had been taking the Cass "treatment." From the results of chemical analyses carried out in the A. M. A. Chemical Laboratory it may be stated that the Van Ard treatment consists essentially of acetylsalicylic acid (aspirin), cinchophen, sodium bicarbonate (baking soda), and a laxative. It is obvious that the Van Ard and Cass "treatments" are, for all practical purposes, identical. In the Cass treatment it was epsom salts, flavored, while in the Van Ard treatment it seems to be phenolphthalein and aloes. (*Jour. A. M. A.*, April 19, 1930.)

Report on Preparations

The Council on Pharmacy and Chemistry issues a preliminary report reviewing the available evidence published by J. C. Small concerning preparations stated to represent products obtained from the bacterium claimed to be the cause of rheumatic fever. Preparations of this organism were presented to the Council by the H. K. Mulford Company as S. C. A. Soluble Antigen, S. C. A. Serum Equine (Concentrated), and S. C. A. Serum Bovine (Unconcentrated). The Council decided that the published work of Small does not offer sufficient evidence to warrant the acceptance of the Mulford products. Further doubt has been cast on the value of this therapy by the paper of Dr. May G. Wilson, in which it is reported that the administration of *Streptococcus cardioarthritidis* antiserum and of the soluble antigen of *Streptococcus cardioarthritidis* did not seem to influence the usual clinical course of the disease or prevent the occurrence of relapses. The Council holds that, while the products are suitable for controlled clinical investigation by experimental workers, propaganda which invites their general use is not warranted at this time. (*Jour. A. M. A.*, April 26, 1930.)

Theobromine and Theophylline Preparations

The Council on Pharmacy and Chemistry reports that, quesitons having arisen in regard to the advertising claims that might be permitted for the xanthine derivative preparations accepted for New and Non-Official Remedies, the Council's referee for these products presented a review of the important literature, with special reference to the value of xanthine derivatives in vascular hypertension and arteriosclerotic conditions. In the light of this review, the Council decided that the following claims could be permitted for both theobromine and theophylline: (*a*) diuretic action; (*b*) myocardial stimulation; (*c*) occasionally (and more often with theophylline) relief of pain in angina and similar lancinating pains. It does not seem permissible to claim lowering of hypertension. (*Jour. A. M. A.*, April 26, 1930.)

PROCEEDINGS

House of Delegates of A. M. A.

The first session of the House of Delegates at the eighty-first annual session of the American Medical Association, held in Detroit, Michigan, June 23 to 27, 1930, was called to order by the speaker, Dr. F. C. Warnshuis, at 10 A.M., Monday, June 23.

The total number of delegates registered and in attendance on the meetings of the House of Delegates was 160. All constituent state and territorial medical associations were represented except Delaware, Idaho, Nevada, New Mexico, Alaska, Hawaii, the Philippine Islands, and Porto Rico, and all sections of the Scientific Assembly were represented except the Section on Obstetrics, Gynecology and Abdominal Surgery, and the Section on Pharmacology and Therapeutics.

The minutes of the meetings of the House of Delegates at the Portland session were approved as printed in the official Proceedings.

Address of the Speaker.—Dr. F. C. Warnshuis, speaker, in his address to the House of Delegates, recommended that the House of Delegates should have one executive session at each annual meeting for the purpose of giving the most careful consideration possible to matters pertaining to policies of the Association. This recommendation was later adopted by the House of Delegates.

The speaker also recommended that a reading clerk should be appointed to read all reports and resolutions, in order to insure that all members of the House are able to hear and so definitely to understand the import of these communications to the House. The Reference Committee, to which the address of the speaker was referred, recommended the adoption of the speaker's suggestion, with the provision that any delegate who preferred to read a resolution or other communication submitted by himself should be privileged to do so.

Address of the President.—Dr. Malcolm L. Harris, president, in his address to the House of Delegates, referred to the proposed establishment in European countries of universal medical service by the government. He discussed the present National Health Insurance Act in effect in England and the proposal of the British Medical Association to provide a nation-wide medical service, the establishment in Prussia of an occupational tax levied on physicians, and other developments of a somewhat similar nature in Europe.

Dr. Harris renewed the recommendations offered by him as president-elect at the Portland session, to the effect that component county medical societies should incorporate and establish medical centers, owned, controlled and managed by the members of these societies, where all classes of persons who are unable to pay regular fees can be given the highest type of medical treatment at prices within their means.

The president discussed the work and the purposes of the Committee on the Costs of Medical Care, and gave specific information concerning certain principles adopted by that committee at its last meeting, which are as follows:

1. The personal relation between physician and patient must be preserved in any effective system of medical service.

2. The concept of medical service of the community should include a systematic and intensive use of preventive measures in private practice and effective support of preventive measures in public health work.

3. The medical service of a community should include the necessary facilities for adequate diagnosis and treatment.

An important recommendation offered by the president was that the House of Delegates should authorize and request the Board of Trustees to establish a Bureau of Medical Economics, whose functions shall be to study all economic matters affecting the medical profession. A similar suggestion was contained in a resolution offered later in the session by the delegates of the California Medical Association.

Address of the President-Elect.—In the address of the president-elect, Dr. William Gerry Morgan, the House of Delegates was asked to give consideration to the advisability of holding a mid-year meeting of the House of Delegates, always in the headquarters of the Association in Chicago.

A considerable portion of the address of the president-elect was given over to a discussion of the relations of government to hospital maintenance and of the relation of the physician to the hospital. In concluding this part of his address, Dr. Morgan laid down the following principles:

1. The physician is no more obligated to provide for the care of the indigent sick than his fellow-citizen.

2. In mutual charitable undertakings for the care of the sick, each citizen contributes what he has: the laymen, physical necessities; the physician, professional skill. But each has a right to protect him-

self from exploitation and to judge of the merit of the recipients of his bounty.

3. When a hospital offers its facilities to a mixed clientele—pay, part-pay, and pauper—the distinction between the sources of those facilities should be clearly recognized. The physical equipment and service is of general public origin, and their uses may be sold or given away in the discretion of lay boards; but the professional facilities are, and always must be, the contribution of the medical staff as individuals and can not become in any sense the property of the institution.

4. When a hospital is owned and operated by the government and supported by taxation, to which the medical profession contributes its due proportion, medical attendance should be paid for by taxation, along with all the other facilities supplied by the institution.

5. No hospital, instituted and supported by public philanthropy or community coöperation of any kind, should be permitted to increase its revenues and so reduce its financial burden on the public by any system of collecting fees for medical attendance, and thus engaging in the corporate practice of medicine.

6. The membership of the Association should be guided by these principles in accepting posts on the staffs of hospitals, and should refuse to support, by the contribution of their services or by the reference of their patients, any institution violating them.

Report of the Secretary.—The secretary reported that the enrolled membership of the Association on April 1, 1930, was 99,181, and that during the year 1929 the deaths of 1,378 members were recorded.

The number of Fellows on April 1, 1930, as shown by the secretary's report, was 65,419.

A table was presented, showing the number of counties, the number of component county medical societies, and the number of counties not organized, the number of physicians in each state, and the number of members in each of the constituent state medical associations.

A large part of the secretary's report was devoted to a discussion of the need of the development of a more militant spirit in county medical societies and in state medical associations, to the end that each of these units of medical organization, in its sphere, will become more efficient in advancing the science of medicine, in improving the means and methods of its application, in bettering the public health, and in persistently opposing anything and everything that would reduce the medical profession to the status of a trade or of a socialized group of hirelings.

Report of the Board of Trustees.—The Board of Trustees, in its report to the House of Delegates, referred to the death of Dr. Charles W. Richardson, for more than nine years a member of that board, and paid a high tribute to Dr. Richardson for his devoted and efficient service.

Announcement was made of the election by the Board of Trustees of Dr. Thomas S. Cullen, of Baltimore, to serve as a member of the Board of Trustees, to fill the vacancy created by the death of Dr. Richardson until the first meeting of the House of Delegates.

Committees.—The appointment of the following committees was reported:

Committee on Military Affairs and National Defense.—Holman Taylor, chairman, Fort Worth, Texas; Fred B. Lund, Boston, Mass.; E. W. Meyerding, St. Paul, Minn.; Frank K. Boland, Atlanta, Ga.; S. E. Lambert, Spokane, Wash.

Committee on Poisonous Gases—H. Gideon Wells, chairman, Chicago, Ill.; Yandell Henderson, New Haven, Conn.; Carey P. McCord, Cincinnati, Ohio; L. R. Thompson, Washington, D. C.

Committee on History of the American Medical Association—George H. Simmons, Chicago, Ill.; William Allen Pusey, Chicago, Ill.; E. J. Goodwin, St. Louis, Mo.; Holman Taylor, Fort Worth, Texas; W. L. Burrage, Brookline, Mass.; John L. Lane, New Haven, Conn.

Income and Expenditures.—The financial statement submitted by the Board of Trustees showed that the gross income of the Association for the year 1929 was larger than in any previous year, but that increased expenditures, due to enlargements and improvements in the publications of the Association and in the expansion of the work of the various councils, bureaus and departments, more than offset the gain in gross income. The net gain for the year was $257,654.86—$19,000 less than the net gain reported for the year previous. The outlay occasioned by increased activities in practically every department was, exclusive of the department of publications, approximately $26,000 greater than in 1928.

The Board of Trustees commented on the constantly increasing demands that are being made for greater service, and pointed out that the natural development of the Association would inevitably necessitate larger annual expenditures and that the expansion and improvement of service, together with

the necessary installation of equipment to replace that worn out by constant use over a period of many years, and the provision of more adequate housing facilities, will inevitably demand a larger income than has heretofore been realized.

The Journal and Other Publications.—The net paid weekly average circulation of *The Journal* for the year 1929 was 96,220, showing an increase of about 3,000 subscribers.

The report of the Board of Trustees showed that, with a single exception, each of the special journals recorded a gain in circulation in 1929, although in some instances the gain was very small. The total number of names on the mailing lists of the special journals on December 31, 1929, was 23,125. The net loss sustained through the publication of this group of journals in 1929 was less by $8,000 than in the preceding year. The Board of Trustees made grateful acknowledgment of the service rendered by the editorial boards of the special journals, the members of which serve without compensation.

The Quarterly Cumulative Index Medicus, considered to be one of the most important ventures sustained by the Association, was, according to the report of the Board of Trustees, enlarged and improved during the year, and plans for further improvement were submitted to the House of Delegates. Announcement was made that the annual contributions of the Carnegie Institution, which has generously supported the Quarterly Cumulative Index Medicus, would be terminated in 1931, and the Board of Trustees expressed the hope that some philanthropic agency might be concerned with securing for the Index an adequate endowment to insure its permanence.

The circulation of *Hygeia* was reported to be well over 75,000. Approximately 70 per cent of *Hygeia*'s subscribers are laymen, and approximately 30 per cent are physicians. The gain in circulation in 1929 was more than 10,000, this gain having been recorded principally among educators and other professional groups outside of the medical profession. The income derived through the publication of *Hygeia* in 1929 was sufficient to pay publication costs and leave a net gain approximating $10,000. The Board of Trustees appealed to the physicians of the country for their whole-hearted support of *Hygeia*.

The volume of advertising in the publications of the Association was reported to have been larger in 1929 than in any previous year. The usual large amount of offered advertising matter was rejected, in keeping with the express determination of the board in maintaining the high standards that have heretofore characterized the advertising columns of the Association's periodicals.

The eleventh edition of the American Medical Directory was issued in July, 1929. Certain changes effected in this edition appear to have been favorably received and are believed to have contributed to its improvement. While sales of the eleventh edition were still in progress at the time of the preparation of the report of the Board of Trustees, it was indicated that receipts would be large enough to meet practically all publication costs.

Coöperative Medical Advertising Bureau.—The Coöperative Medical Advertising Bureau now serves thirty official publications of constituent state medical associations. The *Delaware State Medical Journal* was added to this group in 1929, and only two state medical journals are not members of the Coöperative Medical Advertising Bureau.

The earnings of the bureau for 1929 were $27,584.99, of which $11,500 was rebated in proportionate amounts to the journals holding membership. The remainder of the sum represented by the total earnings of the bureau was used in paying operating expenses. The sum rebated to coöperating state medical journals was, of course, in addition to the amounts received by those journals in payment for advertising space.

Order Department and Mailing Section.—The Order Department, through which is handled individual orders for publications of the Association other than its regular periodicals and other material provided for members, took care of approximately 66,000 orders during the year, the total number of units having been 273,287. Indicative of the constantly increasing demands made on the offices of the Association, it is interesting to note that, exclusive of first-class mail, 213 tons of mailing matter went out from the Order Department in 1929, as compared with 146 tons in 1928. In a supplementary report submitted by the Board of Trustees, it was brought out that approximately 3,000 tons of outgoing printed material were handled by the mailing department of the Association in the last year.

The Library.—The demands made on the library are constantly increasing, so that for the third time in as many years the quarters provided for it have been outgrown. In 1929, nearly 2,000 library packages were supplied, approximately 5,000 periodicals were lent, and 3,000 reference questions were

answered. About 700 periodicals are regularly received, and working relations are maintained with other important libraries.

The Employees' Library, maintained by fees paid by employees of the Association, lent more than 5,000 books during the year covered by the report of the Board of Trustees.

Council on Pharmacy and Chemistry.—In February, 1930, the Council on Pharmacy and Chemistry entered upon the twenty-fifth years of its existence. One of the objects announced at the founding of the Council was the publication of an unofficial pharmacopœia for new drugs, to provide tests and standards for such preparations as might have promise of therapeutic usefulness, pending the time when they should be eligible for the Pharmacopœia. This eminent object of the Council has been strikingly fulfilled, and each succeeding year finds increased evidence of the Council's successful performance and of its increasing usefulness to the medical profession.

Another object, declared at the inception of the Council on Pharmacy and Chemistry, was that a salutary influence should be exercised over the claims made for proprietary medicines in advertising. With the establishment of the Council, advertising in *The Journal* was limited to preparations reported on favorably and to claims permitted by the Council. This rational supervision was extended to other publications of the Association, and soon the official organs of constituent state medical associations gave support to the work of the Council until, at the present time, all of the state medical journals, with two exceptions, limit their proprietary advertising to products passed by the Council. A considerable number of medical publications not controlled by constituent state medical associations likewise give their support to the Council's work.

The report of the Board of Trustees contained a rather extensive description of the activities of the Council on Pharmacy and Chemistry, which is composed of seventeen men of outstanding prominence in the scientific world. The members of the Council serve without compensation and give a large amount of their time to its work.

In view of the widespread popular interest in the use of properly selected foods for the promotion of health and the consequent exploitation by commercial interests of food products with a health appeal, the Council on Pharmacy and Chemistry has created a special Committee on Foods. This committee examines the non-medicinal products for which health claims are made, and publishes in *The Journal* and in an annual publication, *Accepted Foods*, descriptions of products found to meet the committee's requirements and also of those found unacceptable.

The Therapeutic Research Committee of the Council on Pharmacy and Chemistry reported that eleven grants, amounting to $3,000, were made during the year 1929. These grants are intended to be of assistance as supplemental to other resources of scientific investigators.

Council on Physical Therapy.—The Council on Physical Therapy reported increased activities during the year covered by the report of the Board of Trustees, these having been concerned chiefly with the dissemination of information concerning the merits and limitations of physical methods and energies as therapeutic agents. Progress is slowly but surely being made in divesting physical therapy of exaggerated and uncritical claims with which its advance has been hampered. An increasingly conservative and scientific attitude on the part of the better manufacturers of physical therapeutic equipment and on the part of authors of papers on physical therapy is being noted. Scientific investigators in the larger universities and medical schools are seriously undertaking experimental work in determining the biologic effects of light, heat, and physical exercise, and their limits of therapeutic application.

By means of special articles, addresses before scientific societies and other gatherings and radio broadcasts under the auspices of the Council on Physical Therapy, the medical profession and the public are being informed of the possibilities and impossibilities of physical therapy as a curative or preventive agent.

In all of its educational activities this Council endeavors to point out the importance of physical therapy in medicine as an adjuvant rather than as a sole method of treatment. The Council expressed its opinion that too much emphasis has been placed on apparatus therapy and not enough on the possibilities of such measures as heat, massage, therapeutic exercise, and occupational therapy.

The Council has coöperated with the Bureau of Investigation in exposing worthless devices by conducting experiments to determine the physical characteristics of such contrivances and their actual biologic effects. The Council has also coöperated with governmental agencies and other investigative bodies in combating the sale of harmful and useless apparatus for the purpose of self-treatment. The

publishers of a number of the better periodicals have conferred with the Council regarding claims tha might legitimately be made in advertisements of devices sold to the public.

The various committees of the Council have prepared and published reports dealing with nomenclature in physical therapy, with x-rays as a diagnostic agent, and with x-rays and radium as therapeutic agents in deep-lying and superficial conditions. A committee on education is preparing a bibliography on physical therapy and related subjects, and the Committee on Standardization has undertaken a critical survey of the scientific literature.

Bureau of Legal Medicine and Legislation.—The work of this bureau, as described in the report of the Board of Trustees, has covered a wide scope and has been vigorously prosecuted in the interests of the medical profession and the public.

The report of the Bureau describes its activities in opposing legislation of the type of the Sheppard-Towner Maternity and Infancy Act and in opposing bills introduced in Congress designed to bring about revolutionary changes in the laws relating to narcotic control which would make the medical profession subject to a government bureau in which power would be vested that would destroy the validity of licenses issued by the states to physicians in so far as they apply to the use of narcotics.

The report of the Bureau of Legal Medicine and Legislation as submitted to the Board of Trustees discusses at some length World War Veterans' legislation under the provisions of which the United States Government would provide free medical and hospital service for any and all persons who served in the World War, irrespective of the service origin of diseases or injuries affecting the proposed beneficiaries of such service. The policies contemplated in such legislation have been actively and persistently opposed by the American Medical Association.

Rulings have been issued by the Commissioner of Internal Revenue to the effect that the taxpayer has the "right to consider the entire amount received as professional fees as earned income if the taxpayer is engaged in a professional occupation such as a doctor or lawyer, even though the taxpayer employs assistants who perform part or all of the services; provided the client or patient is that of the taxpayer and looks to the taxpayer as the responsible person in connection with the services performed. This ruling will also apply to income received as professional fees from a professional partnership, even though the partnership employs assistants who work on a salary basis; provided the clients or patients are that of some active member of the partnership and look to some active member of the partnership as responsible for the services performed."

These rulings of the Commissioner of Internal Revenue were made as the result of an appeal made by Drs. Arnett and Crockett, of Lafayette, Indiana, with whose counsel the American Medical Association coöperated with counsel employed by the Association.

Changes in tariff of interest to physicians were discussed in the supplementary report of the Board of Trustees, which showed that, although duties have been increased on a considerable number of articles necessary for the diagnosis and treatment of disease, the increases were held down to a point below that demanded by certain manufacturers of surgical instruments. The Bureau of Legal Medicine and Legislation actively opposed undue increases in tariffs on surgical instruments and appliances used in the practice of medicine. The Board of Trustees, in its supplementary report to the House of Delegates, had the following to say: "It will be regretted if the increased duty paid by importers at ports of entry will be made the excuse for increases in retail prices far greater than the increase in duty and will in the end be reflected in the cost of medical, surgical and hospital care."

Other matters discussed in that part of the report of the Board of Trustees devoted to the activities of the Bureau of Legal Medicine and Legislation were the tendency on the part of state legislatures to add to the liabilities and duties of physicians, the increased activities of cultists in an effort to compel their admission into non-sectarian hospitals, and defense against unjust malpractice claims.

Bureau of Health and Public Instruction.—The general correspondence of the Bureau of Health and Public Instruction, which represents an important part of the work of this bureau, was materially increased during 1929. More than 4,000 inquiries concerning one therapeutic product were received by the bureau during the year, a fact which shows the increasing interest of the public in matters pertaining to health and the constantly growing use of the services of the bureau. Answers to more than 300 questions submitted to *Hygeia* were provided by the bureau.

Three hundred and two radio health talks were delivered over Station WBBM, which elicited far greater response from radio listeners than in any previous year and resulted in bringing to the Asso-

ciation many inquiries and requests for printed material. Many of the radio talks delivered under the auspices of the Bureau have been mimeographed and copies made available for the use of component county medical societies.

The director and assistant director of the Bureau of Health and Public Instruction delivered addresses before twelve important lay organizations in five different states, and exhibits of educational material were made during the year at the meetings of nine state medical societies and at many meetings of other medical societies and important professional and lay organizations.

During the year more than 155,000 copies of pamphlets and posters of the bureau were distributed.

Efforts have been continued to popularize the periodic examination of apparently healthy persons, and approximately 75,000 of the forms used in recording the observations in periodic health examinations were sent out by the bureau.

The assistant director of the bureau devoted a considerable part of his time during the year to the collection and compilation of statistics dealing with the capital investment in medicine and the income of physicians. The response from the profession generally has not been large enough to make it possible to arrive at representative figures concerning either the investment required in medical practice or the income of physicians, but the work is being carried on in the hope that dependable information may be secured.

The Association, through the Bureau of Health and Public Instruction, has continued its coöperation with the National Education Association, the National Congress of Parents and Teachers, and other important bodies.

Bureau of Investigation.—The work of this bureau was far heavier in 1929 than in any previous year of its existence. More than 10,000 individual inquiries of a general nature were received and answered, of which 6,350 came from laymen and 4,078 from physicians.

Better Business Bureaus and governmental agencies are availing themselves of the services of the Bureau of Investigation to a much greater extent than heretofore. The fullest possible coöperation has been given to official government bodies in Washington and elsewhere in the efforts of these agencies to protect the public against imposition by the promoters of nostrums and appliances of various kinds for which undue claims of therapeutic efficiency have been made.

The usual demand for the lantern-slide loan service and for pamphlets and leaflets issued by the bureau has been well maintained.

The Chemical Laboratory.—The Chemical Laboratory has not only continued, but has extended its work of investigating therapeutic products, especially those sold to the medical profession, and has provided the Bureau of Investigation with analyses of certain nostrums sold to the public.

As in previous years, the principal work of the laboratory has been in coöperation with the Council on Pharmacy and Chemistry. During the year the laboratory has been called on to deal with a number of new substances or new modifications of well-known drugs.

The amount of work which the laboratory does in coöperation with manufacturers of therapeutic products is increasing greatly.

Members and Fellows of the Association are making constantly growing demands on the laboratory for information concerning problems of chemical interest to physicians.

Annual Scientific Exhibit.—The number of individual exhibits at the Portland session was 113 and the total number of exhibitors approximately 240. Four of the sections of the Scientific Assembly sponsored exhibits. There were three special exhibits—one dealing with fresh pathological material, a second with fractures, and a third with diagnostic biochemical methods. These exhibits attracted widespread attention.

The Scientific Exhibit has come to be an outstanding feature of each annual session of the Association, and each succeeding year brings to it a larger attendance of interested physicians who study its instructive material. The services of many of the most prominent teachers and practitioners, who personally participate in the demonstrations, are freely given to the Scientific Exhibit.

Central Scientific Exhibit.—Three additional exhibits, selected from the annual Scientific Exhibit at Portland, were installed in the Central Scientific Exhibit during the year. This exhibit is now open for visitors, and members and Fellows of the Association are cordially invited to see it.

Committee on Scientific Research.—During the year, twenty-two new grants, amounting to $14,150, were made by the Committee on Scientific Research. In all cases these grants have been made for materials and other necessary expenses, and not for the salaries of workers. The money has been paid to the financial officers of institutions with

which grantees are connected, thus insuring accurate accounting of the monies, which are disbursed on requisition by the grantees.

A complete list of the grants made by the committee forms a part of the report of the Board of Trustees submitted to the House of Delegates.

Advisory Committee on Trachoma Among the Indians.—The Advisory Committee on Trachoma Among the Indians, composed of Drs. William H. Wilder, Arnold Knapp, William Campbell Posey, and Francis I. Proctor, having concluded the work assigned to it, was discontinued at its own request. The Board of Trustees conveyed to the members of this committee an expression of its gratitude for the splendid services rendered.

Building and Equipment.—The Board of Trustees reported to the House of Delegates that it is successfully proceeding with its plans for providing new and enlarged housing facilities in Chicago. At the time the report was submitted, negotiations were proceeding for the purchase of the property needed in addition to that which has already been secured.

In the meantime, the building now occupied has been maintained in the best possible condition and has been utilized to the best possible advantage, although it is inadequate to serve the needs of the Association.

Necessary additions have been made to mechanical equipment, including a large rotary press purchased at the cost of about $70,000. Necessary replacements and additions to mechanical equipment will involve further expenditures of considerable amounts in the near future.

Field Work.—In the supplementary report of the Board of Trustees, it was brought out that the number of meetings of constituent state medical associations and other societies attended by members of the administrative personnel and by officers of the Association was far greater than in any previous year. Similarly, the number of meetings of independent scientific organizations and lay groups before which official representatives of the Association appeared was greater than in any other year.

Committee on Poisonous Gases.—This committee has been actively at work and has already published reports on the hazardous effects of carbon monoxide and on poisonous gases used in refrigeration.

Scope of the Association's Work.—Apparently, many members do not have any genuine appreciation of the scope of the work of the Association. Many seem to be unaware that any activities are engaged in except those necessary for the production of *The Journal.* Others appear to believe that the Association is concerned only with the publication of its various periodicals.

It was brought out in the report of the Board of Trustees that expenditures of the councils, bureaus, and other departments of the Association were in excess of $280,000 in 1929, this having been in addition to miscellaneous charges due to costs of publication of the special journals and of the Directory, to incidental expenses involved in the conduct of the Association's business, and, of course, in addition to the expense arising from the publication of *The Journal.*

The Board of Trustees urged that members and Fellows of the Association take advantage of avenues open to them for securing information concerning the work of the Association, and that all members of the House of Delegates make comprehensive reports of the proceedings of that body at the annual sessions of the constituent associations they represent.

Report of the Judicial Council.—The report of the Judicial Council was submitted by its chairman, Dr. George Edward Follansbee, and showed that the amount of work confronting the council in 1929 was unusually large and that many of the questions submitted were of a most perplexing nature, indicating that the conditions of the times are tending to produce significant changes in the relations of medicine.

The development of industrial medicine, the activities of corporations in medical fields, the expansion of public health programs—especially those of unofficial agencies—the organization of so-called "hospital associations" and "coöperative diagnostic laboratories," the creation of funds and foundations concerned in some manner with medicine and public health, the workings of compensation laws, and many other factors have given rise to many new questions and have produced many perplexing problems of which final solution is not easily possible.

The council referred, in its report, to concerns known as "coöperative diagnostic laboratories," in which practicing physicians participate as "members." Information available to the council indicates that organization of these concerns is effected in such manner that control will lie in the hands of their promoters and directors, and that practicing physicians identified with them must pay for "membership." These physicians are then expected to refer work to laboratories operated by the concern, and, as a consideration for such reference, receive compensation varying in amount with the amount of

work referred. The Judicial Council expressed the opinion that schemes of this kind are unethical and directly opposed to the interests of scientific medicine and of the public.

The Judicial Council reported that it is constantly being asked to deal with matters over which it has no jurisdiction until they have come before the council on appeal from decisions of the proper official bodies of constituent medical associations. It was brought out that original jurisdiction over the acts and professional relations of members lies with the component county medical societies, and it is the duty of these societies to institute and carry out corrective measures that may be indicated. Constituent state medical associations, from which component county medical societies receive their charters, have original jurisdiction over the officers of medical organizations in the several states, and the powers and duties of the state associations are clearly fixed in their constitutions and by-laws, to which component county medical societies must subscribe. It is highly important and necessary to the efficient working of our scheme of organization that every unit shall fully assume the jurisdiction that belongs to it and shall deal promptly and definitely, but with careful deliberation, with every situation that threatens to bring reproach on the profession or that offers opportunity to extend the worthy influence of organized medicine and to promote the science and art of medicine.

The Judicial Council emphasized the need for the proper preparation of charges and appeals, stressing the fact that organization law is written with proper regard for the rights and privileges of the individual as well as for those of the profession and the public. The council proposed that the by-laws of the American Medical Association be amended so as to provide that no person who is not a doctor of medicine shall be permitted to become a Fellow of the Association.

At the Portland session a resolution was adopted by the House of Delegates, requesting the Judicial Council to submit to the House of Delegates in 1930 "a comprehensive statement for the guidance of the American Medical Association concerning the practice of medicine by corporations, by clinics, by philanthropic organizations, by industrial organizations, by demonstrations and by similar organizations, and concerning the relationship of physicians thereto." The council reported to the House that the scope of this resolution was so broad and the magnitude of the task assigned so great that it had been found impossible to comply with the request that a comprehensive report be submitted at the Detroit session, but that the council had sought to gather information and secure expressions of opinion from qualified persons, and had found that, to carry out the intent of the resolution, it would be necessary to compile and digest a mass of information of such size that accomplishment of the task is far beyond the capacity of the facilities of the council. It was brought out that some conditions requiring study have been so lately created and are undergoing such rapid changes that quick appraisals can not be made. Others now have purely local bearing, and no present national significance, but may come to be of important interest to the entire profession. With respect to some of the matters covered by the resolution, the council found that there had been no crystallization of opinion and expressed a doubt that well-considered judgment can be formulated. It was urged that component county medical societies and constituent state medical associations study closely conditions existing in their respective jurisdictions, and that they be guided in offering or withholding approval and coöperation in movements affecting medicine by conclusions based on such studies.

With regard to the practice of medicine by corporations, the council voiced its opinion, based on present evidence, that such practice is detrimental to the best interests of scientific medicine and of the people themselves. "When medical service is made impersonal, when the humanities of medicine are removed, when the coldness and automaticity of the machine are substituted for the human interest inherent in individual service and the professional and scientific independence of the individual physician, the greatest incentive to scientific improvement will be destroyed and the public will be poorly served."

Report of the Council on Medical Education and Hospitals.—The Council on Medical Education and Hospitals reported that two new medical schools are in process of organization: one, the University of Southern California School of Medicine, opened in the fall of 1928; and the other, the School of Medicine of the Duke University at Durham, North Carolina.

The statistics compiled by the council, which appeared in *The Journal* for March 29, 1930, were referred to in the report of the council, and the most significant and noteworthy points were recited as follows:

(*a*) The more complete and valuable information made available in regard to hospitals.

(*b*) The clearer outlook over all hospitals whereby the council's work can be directed toward those in greater need of investigation.

(*c*) A gradual coördination between hospitals furnishing training for internes and those providing opportunities for residencies in the several special fields.

The council reported that it had been engaged in an investigation of smaller hospitals, in compliance with suggestions made by the House of Delegates at the Portland session, and that an investigation of laboratories of radiology is now under way.

A résumé of the work of the Council on Medical Education and Hospitals since its creation in 1904 was included in the report to the House of Delegates, which showed the progress registered in a quarter of a century of intensive work.

The adoption of the continuous method of medical instruction, whereby a student can complete the required four years of college education of eight or nine months each in three calendar years, is being attempted in eight medical schools. Statistics heretofore presented by the council have shown the average age of students graduating to be 26½ years —or 27½ years, counting the interneship— and the council expressed the opinion that any method that can reduce this maximum age would be a move in the right direction.

The council reported on a resolution referred to it at the Portland session, requesting that an investigation be made of the present teaching of obstetrics in the United States and that the council make such recommendations for increasing the clinical teaching hours of obstetrics as might be warranted by the results of its investigations. The opinion was expressed that the teaching of obstetrics in medical schools has been tremendously improved since 1905, this opinion being based on the following facts:

1. Announcements of medical schools show that all medical schools offering four years of instruction have regular staffs for the teaching of obstetrics.

2. The time devoted to the teaching of obstetrics on the average compares favorably with the time devoted to the teaching of surgery.

3. In the "model curriculum" formulated in 1909 by the Committee of One Hundred, acting under the auspices of the Council on Medical Education, 650 hours was assigned to obstetrics as compared with 680 hours for surgery.

4. In the several complete tours of inspection of all medical schools, their rating in class A, B or C depended, among other things, on the provision made by each school for instruction in obstetrics by means of (*a*) lectures or recitations, (*b*) the examination of patients in prenatal clinics, (*c*) the witnessing of the delivery of patients in demonstration clinics, and (*d*) the provision of opportunities of students to deliver maternity patients personally under supervision.

5. Not only have the council's requirements been well met in the medical schools, but increasing numbers of maternity patients have become available whereby the recent graduates have been enabled to care personally for larger numbers of patients.

6. Even with the great improvements secured since 1900, efforts for further improvement have not been relaxed. In the council's recent conference, for example, a special symposium on the teaching of obstetrics was arranged, in furtherance of Dr. Bloss' resolution.

The council reported that in certain institutions students are being assigned to approved preceptors who are in position to provide such students with suitable hospital, laboratory and library facilities for effective work. The council reported that, while it considered this to be an interesting experiment in medical education, it did not feel that an opinion with regard to its value could be expressed until more time had elapsed and a larger experience had been acquired.

Report of Council on Scientific Assembly.—The report of the Council on Scientific Assembly stressed the importance of the clinical lecture programs at annual sessions of the Association and the necessity for increasing coöperative effort between sections of the Scientific Assembly and the Scientific Exhibit. It was stated by the council that gratifying progress is being made in this direction, since many of the papers presented before the scientific sections are now devoted to subjects treated in the Scientific Exhibit, and that several complete exhibits are presented by individual sections.

Protest Against Certain Government Regulations. —Dr. J. N. Van der Veer, New York, offered a resolution protesting against regulations under the Volstead Act and the Harrison Narcotic Act, requiring physicians "to state the diagnosis of the disease or ailment of the patient on the stub of every prescription" for alcohol or for narcotic drugs.

This resolution was referred to the Council on Scientific Assembly and then to the Board of Trustees and to the Judicial Council. The Board of Trustees, in a report submitted to the House of Delegates, approved the principles of the resolution

and expressed its intention to attempt to secure the indicated changes in regulations now in effect. The Judicial Council recommended that effort be made to have the objectionable regulations changed.

Caucuses.—Dr. E. C. Thrash, Georgia, offered a resolution providing that the House of Delegates should "discountenance and disapprove sectional caucuses pertaining to matters that are to be acted upon" by the House of Delegates.

The Reference Committee on Rules and Order of Business recommended that this resolution be not adopted, as the intent is already covered by a rule of the House of Delegates. The recommendation of the Reference Committee was adopted.

Entertainment at Annual Sessions.—Dr. C. F. Moll, Michigan, submitted resolutions providing that "the precedent governing entertainment functions is hereby terminated," and "that at future annual sessions the only formal entertainment sponsored by this Association shall be the president's annual reception, the expense of which shall be borne by this Association," and "that the only obligation that shall rest on the local profession of any city in which this Association holds its annual session shall be to render such assistance through proper committees or individuals as will enable the trustees and other officers to provide suitable hotel accommodations, meeting places, exhibit space, and local information."

These resolutions were referred to the Board of Trustees, and, on recommendation of the board, were adopted by the House of Delegates.

Council on Medical Economics.—Dr. J. B. Harris, California, submitted resolutions from the California Medical Association providing that the American Medical Association should establish a Council on Medical Economics. This resolution, together with the recommendation of the president providing that a Bureau of Medical Economics be established, was referred to the Reference Committee on Reports of Officers. This Reference Committee recommended "that the Board of Trustees put the principle into effect by the creation of a Bureau of Medical Economics to function under the direction of the said board." The recommendation of the Reference Committee was adopted.

Standardization of Hospitals.—Dr. E. P. Sloan, Illinois, offered resolutions commending the Council on Medical Education and Hospitals for the work already accomplished, and urging the council to continue its work and to increase its activities in the field of hospital inspection and standardization.

On recommendation of the Reference Committee on Medical Education, the resolutions submitted by Dr. Sloan were adopted.

Committee to Study Legislative Problems.—Dr. C. B. Wright, Minnesota, offered a resolution to the effect that the speaker of the House of Delegates be authorized to appoint a committee of five, representing the various sections of the country and composed of men who have had experience in dealing with state legislation, which committee should study legislative problems and offer recommendations to the House of Delegates and, in the interim, to the Board of Trustees.

The Reference Committee on Legislation and Public Relations recommended that the resolution be changed to read as follows:

"RESOLVED: That the Board of Trustees appoint annually a committee of five, representing various sections of the country, the personnel of said committee to be composed of men who have had experience on state legislative committees; that said committee is to study these problems and to coöperate with the Bureau of Legal Medicine and make such recommendations as they consider necessary to the House of Delegates, and in the interim to the Board of Trustees."

The resolution as amended by the Reference Committee was adopted.

Dangers from Children's Toys.—Dr. J. D. Brook, Michigan, offered a resolution providing that action be taken through a proper committee designed to educate manufacturers of children's toys to the hazard involved in the use of pins, buttons, and other small objects loosely attached to such toys.

On recommendation of the Reference Committee on Hygiene and Public Health, the resolution of Dr. Brook was adopted.

Motion Pictures.—Dr. E. F. Cody, Massachusetts, offered a resolution providing that the Board of Trustees be authorized to appoint a special committee to investigate and study the educational possibilities of motion pictures and their proper utilization in connection with the teaching of medicine by teaching institutions and by medical societies.

This resolution was referred to the Board of Trustees, and, on recommendation of that body, was adopted by the House of Delegates.

Clinical Lectures.—The Reference Committee on Sections and Section Work commended the action of the Council on Scientific Assembly in substituting clinical lectures for diagnostic clinics at annual sessions of the Association, and the report

of the Reference Committee was approved by the House.

Action on Secretary's Report.—The Reference Committee on Reports of the Board of Trustees and Secretary reported as follows on the report of the secretary:

"We endorse the sentiment expressed in the report of our secretary, in which he recommends a more active and aggressive program on the part of component medical societies, stressing the necessity for unified action on the part of the medical profession as being essential in maintaining leadership in all questions pertaining to health matters. Also, the importance of establishing and maintaining the hearty coöperation of both the state and the county organizations through the agency of their respective public relations committees.

"We recognize the changing method in medical practice; however, we earnestly urge a realization of the necessity of maintaining the personal relationship between physician and patient, and oppose any attempt on the part of any well-meaning but misinformed and misguided individuals or organizations in their efforts to apply "mass production" methods to the practice of medicine.

"We approve that portion of the report advocating the education of the public in all matters pertaining to health and disease.

"We concur with the idea expressed that the medical profession has been too reticent and conservative in taking a position of active leadership in health activities, particularly with reference to the education of the public along these lines.

"We believe that it would be a decided aid to organized medicine if the members of the House of Delegates would avail themselves of the opportunity of attending the annual conference of the state secretaries."

This report of the Reference Committee was adopted by the House of Delegates.

Action on Report of Board of Trustees.—The report of the Reference Committee on the report of the Board of Trustees, which was adopted by the House of Delegates, was as follows:

"We heartily commend the Board of Trustees for the financial showing made, as exemplified by the auditor's report for the past year. A review of the report emphasizes the wisdom of the action of the house in authorizing the increase in the subscription price of *The Journal* to meet the demands of the increased Association activities.

"We are gratified by the position of *The Journal* as the leader of medical publications, as well as the special journals in their respective fields.

"We believe that *Hygeia* has a place in every physician's waiting room, and the attention of Fellows should be called to this fact.

"We emphasize the value of the library and commend its more general use.

"We endorse the work of the various councils for the past year as detailed in this report.

"We especially commend the work of the Bureau of Legal Medicine and Legislation with reference to national legislation in connection with the narcotic bill and the Sheppard-Towner Maternity and Infancy Act.

"We approve of that part of the report with reference to the World War Veterans' Act wherein attention is called to the viciousness of this proposed legislation, and we recommend that this House of Delegates go on record as being opposed to the federal government giving all medical and surgical care to veterans suffering from injury or disease that is not service-connected.

"We recommend the methods employed by the Bureau of Legal Medicine and Legislation, and urge close coöperation of the various state legislative committees with this bureau.

"We approve of the educational campaign that has been inaugurated by the Bureau of Health and Public Instruction, and recommend a continuation of the coöperative policy with the National Educational Association and National Congress of Parents and Teachers.

"The value and importance of the Annual Scientific Exhibit can not be overestimated, and we recommend that it be continued and expanded from year to year.

"The Trustees' report as a whole reflects decided progress in the Association's affairs. Your committee desires to express its realization of the immense amount of work entailed and its appreciation of their worth-while labors in connection therewith."

Communication to The American Legion.—On motion of Dr. Donald Macrae, Jr., Iowa, the speaker of the House of Delegates and the secretary of the Association were instructed to send a communication to The American Legion, presenting the official attitude of the Association with respect to legislation providing for medical, surgical, and hospital care by the federal government for veterans suffering from injury or disease that is not service-connected.

Amendments to By-Laws. — The Reference Committee on Amendments to the Constitution and By-Laws recommended that Chapter XI, Section 2, of the by-laws be amended as suggested in the report of the Judicial Council to read:

"Any member of this Association holding a degree equal in requirement to that of M.D., granted by a school of medicine recognized by the American Medical Association, entitling the holder to apply to a state board of medical examiners and registration for license to practice medicine, and who on the prescribed form shall apply for Fellowship and subscribe for *The Journal*, paying the annual Fellowship dues for the current year, shall be inducted into the Association as a Fellow unless the application is disapproved by the Judicial Council."

This amendment was adopted by the House of Delegates and is intended to serve the purpose indicated in the report of the Judicial Council, namely, to exclude from Fellowship all persons except those holding the degree of Doctor of Medicine or its equivalent.

On recommendation of the Reference Committee on Amendments to the Constitution and By-Laws, Chapter XI, Section 12, of the by-laws was amended to apply only to members of the Association. The effect of this amendment is that the House of Delegates shall have power to discipline or expel a member of the Association on recommendation of the Judicial Council.

Federal Aid for Maternal Welfare.—The following resolutions were offered by the Board of Trustees and adopted by the House of Delegates on recommendation of the Reference Committee on Legislation and Public Relations:

"Whereas, The American Medical Association is in entire sympathy with the coöperative efforts of federal and state agencies to establish and develop official local health organizations for the conduct of those activities which are generally recognized as the proper functions of such health departments; and

"Whereas, The usurpation of any public health function by any lay bureau of the federal government, which, through allotments of federal subsidies for special health services, seeks to duplicate and administer duties and functions already placed by law on the United States Public Health Service; and

"Whereas, The United States Public Health Service has in the past efficiently discharged its duties with respect to such matters, and now, through recent reorganization, has been provided with enlarged facilities for carrying on such work; and

"Whereas, An effort is now being made to revive and perpetuate the federal subsidy system established under the defunct Sheppard-Towner Maternity and Infancy Act, which authorized the payment of state subsidies over a fixed period of years, on an arbitrary and irrational basis of population, without reference to the ascertained sanitary and health needs of the several states or to their ability to meet their own needs; and

"Whereas, The payment of such subsidies was made dependent on the surrender by the legislatures of the several states, to the federal government, of the right to supervise and control state activities in the selected field of public health; and

"Whereas, This System, after seven years' trial under the administration of a lay bureau, effected no improvement in the field of public health in which it was operative, notwithstanding the expenditure of more than eleven million dollars of federal and state money; and

"Whereas, In the judgment of the House of Delegates of the American Medical Association, any such system tends to destroy local initiative and sense of responsibility and to pay federal funds for purposes named by the federal government to states not in need of federal aid; be it

"*Resolved*, That the House of Delegates of the American Medical Association condemns as unsound in policy, wasteful and extravagant, unproductive of results and tending to promote communism, the federal subsidy system established by the Sheppard-Towner Maternity and Infancy Act, and protests against the revival of that system in any form;

"*Resolved*, That it is the sense of the House of Delegates that each state should be left free to formulate its own health programs, with the coöperation of the United States Public Health Service if desired by the state, free from any inducement or compulsion in the way of federal reward or coercion;

"*Resolved*, That any legislation involving coöperation between the federal government and the several states in the field of public health must, in the interest of efficiency and economy, in the judgment of the House of Delegates, be administered under the joint supervision and control of the United States Public Health Service and the state health authorities; and be it further

"*Resolved*, That copies of these resolutions be sent immediately to the President of the United States and to every Senator and Representative in Congress."

Care of Veterans.—The following resolutions offered by the Board of Trustees were adopted by the House of Delegates and a copy sent immediately to the President of the United States:

"*Resolved*, That, in the opinion of the House of Delegates of the American Medical Association, legislation to extend in point of time the presumption of service origin of diseases and injuries from which veterans are suffering, to establish arbitrarily the service origin of such diseases and injuries, and to extend greatly the category of such diseases, is without sound basis in the science and art of medicine;

"*Resolved*, That the provisions of such legislation to the effect that lay evidence as to the nature and extent of diseases and injuries is to be given added consideration will give to such evidence weight to which it is in no way entitled and cause pressure on the Veterans' Bureau to allow claims for compensation without adequate medical support;

"*Resolved*, That legislation recently enacted providing for the enlargement of the hospital facilities at the command of the Veterans' Bureau, for the care of veterans, rich and poor, who desire hospitalization and treatment for diseases and injuries that admittedly have no relation whatever to military service, is unsound and communistic in character, and the pending proposal to allow such veterans as are of financially limited means bonuses and money to add to their own comforts while they are in the hospital and to help support their families during that period and for limited periods thereafter is calculated to induce patients to seek hospital care through the Veterans' Bureau when such patients should be better and more economically treated as ambulant patients or treated in their own homes;

"*Resolved*, That the duty of providing medical and hospital care and financial relief for indigent citizens of any state, when disabled by diseases and injuries that did not originate in the line of military duty, is a function not of the federal government, but of the governments of the several states, and should be discharged through state agencies, including permanently established state, county, municipal and private hospitals; and

"*Resolved, further*, That a copy of these resolutions be sent to the President of the United States."

Report of Reference Committee on Reports of Officers.—The Reference Committee on Reports of Officers recommended that the suggestion of the president-elect, to the effect that a mid-year meeting of the House of Delegates should be held each year in Chicago, be not adopted, and this recommendation was approved by the House of Delegates. The Reference Committee reported that existing provisions of the constitution and by-laws for special called meetings of the House make it unnecessary to specifically provide for a regular mid-year meeting.

The Reference Committee approved the conclusions announced by the president-elect with respect to the relations of physicians to hospitals. These conclusions appear in that part of this abstract referring to the address of the president-elect.

The suggestion of the speaker, to the effect that the House of Delegates should go into executive session at 2 P.M. on Tuesday of each annual meeting was approved by the Reference Committee and by vote of the House of Delegates.

(*To be concluded in the September, 1930, issue of this Journal.*)

Sun Cholera Mixture

During the cholera excitement in New York in June, 1849, a physician by the name of G. W. Busteed sent a recipe for the disease to the editor of the New York *Sun*. It was printed, and was so successful in the relief, at least, of the symptoms that it came to be popularly known as the Sun Cholera Mixture. It was admitted to the first edition of the National Formulary in 1883 and in subsequent editions under that name. The original formula called for: tincture of opium, tincture of rhubarb, tincture of capsicum, spirit of camphor, essence of peppermint, equal parts. The formula was modified somewhat later on account of the changing strength of some of the ingredients in later editions of the Pharmacopœia. (*Jour. A. M. A.*, April 5, 1930.)

New Treatments for Cancer

Hanson reports results closely resembling those described by Coffey and Humber, following the administration of thymus extract. Sokoloff reports similar results following the use of an extract of the suprarenal combined with iron. Charlton announces lytic effects on cancer cells following the administration of an extract of the omentum. The interest of the Coffey-Humber method, in its present stage of investigation, lies primarily in the fact that the available evidence seems to demonstrate a definite effect on cancer tissue as the result of injecting suprarenal extract into the body at points removed from the tumor. (*Jour. A. M. A.*, March 1, 1930.)

WOMAN'S AUXILIARY

Central West Virginia

The Woman's Auxiliary of the Central West Virginia Medical Society held its meeting July 16 at Webster Springs. There were twenty members present.

Mrs. J. A. Rusmisell, Mrs .S. P. Allen, and Mrs. C. C. Carson were appointed as a nominating committee to select officers for the coming year. These officers will be installed at Buckhannon in October.

Directly after the business meeting, the members attended the scientific program given by Dr. Walter E. Vest, Dr. W. B. Morrison, and Dr. H. A. Baughn, to the Central West Virginia Medical Society.

The meeting adjourned at 10 P.M. to be served a banquet in the dining room of the Oakland Hotel.

MONTHLY MORBIDITY REPORT

BY COUNTIES

JUNE, 1930	Chickenpox	Diphtheria	German Measles	Influenza	Measles	Meningitis, Cer. Spi.	Scarlet Fever	Smallpox	Tuberculosis, All Forms	Typhoid Fever	Whooping Cough
Barbour											10
Berkeley	1						2			1	
Boone				4	8						7
Braxton		1					1		1	1	1
Brooke					3						1
Cabell		2			2		2	6			
Clay								5			
Doddridge				8				1		3	5
Fayette	1				2	1	1		1	2	
Gilmer		1					1				
Grant					2		1				4
Hampshire	2										
Hancock	1	2	19				15	2	2		
Hardy	2										
Harrison	6				8		9		1	3	78
Kanawha	10			2	4	1	7	1	4	6	14
Lewis	6	3					1				2
Logan	1				5	1	2	1	2	2	3
Marion	1	1			10		14		2	4	2
Marshall					5				4		
Mason									1		4
Mercer	5			1	64		1		1		
Mineral	1	1			5				7		
Mingo	1	3				1		10	1		
Monongalia	1	2			2		2	1			
Monroe					2						2
Nicholas										1	
Ohio	17				28	1	1		7		
Pleasants	3										
Pocahontas										2	
Preston							3			1	
Raleigh		5	1		17			1	6	6	1
Randolph							2				1
Ritchie			3		3		1	1			
Roane										1	
Summers				1						2	1
Webster										1	1
Wirt		1		5							
Wood	1	1			6	1	6	8			6
TOTALS	60	23	23	21	176	6	72	37	40	36	157

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PRIVATE PRACTICE AND THE PUBLIC HEALTH *

By GEORGE H. BIGELOW, M.D.
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Boston, Mass.

I have a great deal that I want to say. I may be clumsy in saying it, but I hope you will bear with me. I hope I will not be offensive, but there certainly is no sense in my coming this distance to speak to you, and you giving me time in your crowded program, unless I tell you what I think. You are, of course, at perfect liberty to leave. There is an exit back of me, I find, so that in case I go beyond reason you can call my attention to it and I can withdraw rapidly, too.

Also, I hope that, although I may appear trivial at times, you will not take that for insincerity. In my experience, in some of these very difficult and baffling matters you must either laugh or cry; if you cry, your nose gets red and you are no good, and if you laugh you may be able to carry on. But I hope I won't be misjudged as being insincere.

A health officer is very susceptible to clinical courtesies. It has been said that, socially and emotionally, the health officer in the presence of clinicians has somewhat the same problem as the illegitimate child at the wedding. I am not so sure that that is so. I think there are more recent specialties introduced into the field that have their roots even less in antiquity than the health officers—the radiologist, for instance; the physiotherapist, the group of endocrinologists. They are certainly of a more recent vintage than we health officers are.

So that, for these reasons, I am appreciative in appearing before you.

Now, why this self-consciousness? I know that at home, with my medical friends, however sympathetic we may be socially, when we come to talk over the job there is something that comes between us. Now, why is it? From the doctor's point of view it seems there are a number of reasons. Perhaps one is summed up by this: that most health officers are darned poor "docs." Some one has said no doctor would be a public health officer if he could make a living at private practice. There are, of course, examples of that; but any new profession, any new branch of an existing profession, draws to it the "also-rans." Look at them, not only in medicine but in every line of endeavor. There is a new breed of fish that has appeared among us which calls itself "investment counsel." It sticks itself in between the stock-and-bond house and the unfortunate individual, and they are supposed to add something. All my incompetent college friends have suddenly become "investment counsels." Then there is a breed of cats that has come up as "hospital consultants." He injects himself in between the architect and the harrassed individuals who want the hospital built. The architect says he is a washout. Sometimes he may contribute something; again he

* Oration on Medicine, presented to the West Virginia State Medical Association at White Sulphur Springs on May 22, 1930.

is a useless fifth wheel. As I see it, every new branch of anything draws, unfortunately, to it as the fire draws the moth, many incompetents—and certainly the profession of public health has suffered from that.

A second point that is raised by the practicing physician is that the health officers are all full of "apple sauce." They talk things that are fatuous and not factual. They throw up to us our enthusiasm for tonsil tweaking. We have charts showing how many tonsils there were before and after the devastation of public health hit them. I don't think in this we can surpass our nose-and-throat brethren. I remember very well the rage that arose in this branch of the profession when the radiologists had the impudence to suggest that they could treat tonsils and do away with the necessity of surgery. A more enraged and fervid group than the tonsillectomists I have seldom had the pleasure of seeing.

Then it is said that this health examination that we are all bleating about is full of nonsense. It is pathetically true that health examinations have an enormous potential of prevention and arresting of disease in them, and that to date, because of imperfect technique, because of imperfect knowledge, because of imperfect utilization, the returns on this great potential for good have been pathetically small.

The doctor points out to us the sovereign state which three years ago began bleating to high heaven that by 1930 they would have no diphtheria. Nineteen-thirty has come and they have diphtheria. They remind us that the tuberculosis people developed a slogan, "No tuberculosis by 1915," and still we have a shocking tuberculosis problem with us. They point out the absurdities that are performed in the name of physical examinations in the schools. Sometimes it is a lick and a promise, and sometimes it is only a lick without even a promise.

They say that we juggle figures around; we eliminate non-residents or we put in non-residents or we do whatever we want so we can prove the miserable thing we have thought up in advance is the thing for us to prove.

They also say of health officers, "It is all right for them to mess around with environmental control, water, and sewage." They think perhaps sewage is the proper element for the health officer. Milk we can mess with; but, for heaven's sake, keep out of this individual, personal hygiene we are now hearing so much about.

Another point that is raised against the health officer is that he glorifies the specialist through his clinics. He starts a clinic, he gets some doctor who has just come out of medical school and doesn't know enough to come in out of the rain; he glorifies him as pediatrician, laryngologist, or whatever the particular clinic may be; gives the impression he is Osler brought back to life, and creates a feeling of dissatisfaction with the general practitioner.

Another criticism is that we are furthering mass treatment and thus are losing that personal relationship between the physician and his patient. I think that public health is suffering from the mass handling of its problems, from lack of imagination in individualizing the particular problem to its environmental, its racial, its prejudicial differences in each community; but I don't think we are doing that any more than many doctors I see who sling the same pill for all headaches and the same pill for all stomachaches, irrespective of what the cause of the discomfort may be. So that I don't think we are alone open to the indictment of mass treatment.

Then it is said that we are building up an enormous bureaucracy all messed up with red tape. Another point that is raised is that we are undermining the economics of the medical profession by the things that we are doing. I frequently hear doctors say, "Leave us alone! Leave us alone! Stick to your environmental control and otherwise let the thing go on as it is."

Then, finally, I think this sentiment of suspicion between the two groups is summed up by the statement that the health officers are interested in—are irresistibly pushing the community toward—state medicine. What is "state medicine"? Of course, a definition is a very dangerous thing. If a definition is so short that you can understand it, it is wrong; and if it is right, it is so complicated that you can't remember it. I remember the child who was asked for a definition of a grass widow, and the heroic infant ventured that a grass widow was the wife of a deceased vegetarian.

Again, I remember the question of a clinic coming up. What is a clinic? We all know what a clinic isn't, but it is difficult to say what it is. It was solved for me when I heard two Jewish gentlemen discussing it. One said a clinic was the noise one glass made hitting against another.

I think that state medicine is much like the shadow that frightens the child on the way to bed. The child doesn't know what it is, so it is scared almost to death. I think very few doctors—certainly in my part of the country—have ever sat down to try to determine just what state medicine is. A definition which I have heard is that state medicine

is service to the individual at the expense of the community. Whether that will hold water or gasoline, or anything else, I don't know; but it is at least short enough to be inaccurate.

If, then, state medicine is something like that—service to the individual at the expense of the community—it is, of course, something that we are thoroughly familiar with. All city hospitals, all free clinics, particularly in the larger communities, are, then, state medicine. The individual gets service at the expense of the community.

There are specialized services. I am rather astonished that health departments have, over the years, been increasing very materially the service that they have given to physicians. In Massachusetts, of course, as well as elsewhere, we give extensive diagnostic service; we distribute free arsenicals for syphilis; we distribute serums and vaccines. The total amount of service given directly to the physicians in Massachusetts amounts to something over $150,000 a year. It is offered to doctors alone. I was thinking the other day that it was rather surprising there hadn't been opposition to it.

There is a friend of mine who runs a clinical laboratory. He says, "When in thunder are you going to take away all of my business?" I think the reason there hasn't been opposition to it is because there are so few clinical laboratory men over the country. If they all laid their heads back and yelled at once, nobody would hear them. So that the number of people economically disturbed by government coming into the field of clinical laboratory work has been very small numerically.

The mental hospitals all over the country are operated by governmental agencies. The tuberculosis hospital is by governmental agency; the communicable disease hospitals are examples of state medicine, also the physicians in the schools, the service to crippled children (which has been so admirably and humanely outlined in the report this morning), and now this service which we have organized in Massachusetts in regard to cancer is state medicine under that definition. Therefore, it seems to me that the question isn't the underlying philosophy of what is state medicine, but it is the extent to which the darned thing is going to be applied that is disturbing the physicians of this country.

I read with considerable interest, recently, the first annual report of the Board of Health of Massachusetts in 1869. The opening sentence is this: "We congratulate the legislature on the fact that the comprehensive idea included under the term 'State Medicine' has at length been established in Massachusetts." This was signed by responsible, conservative physicians of that time. Of course, nowadays, a health officer would be roasted rather than say that, even if he thought it.

There seems to be a need of deconnotating the language. I think much of our trouble comes from the emotional connotations associated with words. Just think of the emotional response to such words as "farm relief," "prohibition," "birth control," and "milk." Milk is getting to be as emotional a liquid as liquor. "The League of Nations," "Bolshevism," "votes for women" (which has kind of calmed down, but we all saw red and got conjunctivitis when it was mentioned a few years ago); "labor unions," "lodge doctors," "fee splitting," "racketeers"—think of the connotations of all of those, and how simple it would be if we could begin clean, without a hideous inheritance of emotional and biasing responses to all such things as those suggest.

I think that, to the average physician, state medicine means, in a vague way, that some great, impersonal, clumsy, futile organization such as some of us saw in the army, with red tape, everything handled through channels, endless delay, endless wire-pulling, and with some damned fool at the top—a state hireling like myself, or even worse if possible—who will order all the doctors what they are to do and when they are to do it; this whole hideous, clumsy, awkward, staggering organization which will give a quality of service that will be unutterably low and which will remunerate the doctors at a degree that is even lower. That, I think, vaguely pictures the connotation of the term "state medicine" to most of my medical friends.

So much for the doctors' side of the picture. What about the health officers? The health officer is disturbed by medical obstructionism. I suppose there has never been a health officer who has really gotten his hands dirty with the job who hasn't, in the stillness of the night, looked up at the stars and cried, "To hell with the doctors!" He really hasn't gotten his hands dirty if he hasn't had an emotional jazz like that.

Why? There are a few things (of course, these are extreme) that throw my points into relief as the others have. For instance, we have been shocked in Massachusetts that, with all the improvement in tuberculosis, in the age group 15 to 39 tuberculosis is the most killing of all disease. We put on clinics in the last six years in the schools and examine over

100,000 children to detect tuberculosis in childhood, refer them back to the doctor when we find anything, and then offer them, through summer camps, through sanatoriums, and in other ways, care to tide them over this hideous period of tuberculosis deaths. We have now been at it six years.

One instance comes to mind. Six years ago we found a boy and we called him suspicious. There were changes in the lungs shown by the x-ray, but not enough to call it positive. Then it went on to juvenile tuberculosis. We recommended sanatorium care and the parents said "Nothing doing." Then this year we went and found that the disease, under our eyes, had progressed; that it was the adult open type of the disease. The child was twelve years old. The chance of death was extremely good, and we recommended immediate sanatorium care. The parents took the patient to a private sanatorium. X-rays were repeated, the same advice was given, and application was sent in to us. Then they went to a tuberculosis "specialist." That man is very actively interested in preventorium and sanatorium care early. This child went to him and he said, "If you will continue under care with me every month, it is not necessary for you to be hospitalized."

I don't mind if it is a fellow out in the provinces who doesn't know; but this man who is, on the one hand, bleating to the high heavens the early institutional care of children of this age group, and then privately giving different advice, is defeating our purpose. The whole value of our expensive service is very greatly jeopardized by such attitudes.

Recently, we found a community that had an unusually rotten milk supply. We were interested in encouraging pasteurization. One medical intellectual giant suddenly announced to the world, through the papers, that in pasteurized milk there was no organic calcium. My chemistry is no good, so I rushed, trembling, to my friend who is a chemist. He said, "That is perfectly true; but also, in raw milk there is no organic calcium."

I know of a town where there are two doctors. One of them was on the board of health at this time and the other wasn't. There was an outbreak of scarlet fever. Every case that went to the member of the board of health had lobster rash. Those going to his competitor, who was not on the board of health, had scarlet fever. You have no idea how it increases the practice to have it diagnosed lobster rash, which is not quarantined.

In our diphtheria prevention work we labored painfully to build up all the hideous propaganda in favor of the immunization of children. (In Massachusetts, in the age group five to nine, diphtheria is still the most killing disease.) The thing is ready, and then, perhaps the day before the first clinic, the head of the women's club goes to the outstanding medical Socrates of the community and says, "What do you think about it?" Perhaps with a shrug of the shoulders he says, "If you want your child to be a test guinea-pig"; perhaps he says, "It is a fad, but it is all right if you like it," and the whole thing falls down.

I think many times this shrug is a protective mechanism. Anybody hates to admit he doesn't know, and, of course, a lot of this has come lately and has come fast. I think it is not really opposition, but it is a protective mechanism against admitting ignorance.

In regard to this diphtheria prevention work, a few years ago the state medical society put on a clinic, sent a man all over the state to instruct the physicians, and none of them would come. Then they conceived the brilliant idea of offering to immunize the doctors' children. Their humanism was touched and they began to come in.

In regard to the prenatal care (which is, of course, shockingly inadequate with us), the difficulty is that the doctors, when we approach them, obstruct any plan that is suggested and feel no sense of responsibility for offering an alternative.

In connection with the typhoid carrier, which is an harassing problem (and I see the interesting pamphlet on it which your state department is putting out), we are very much interested. A case occurred in a private family in one of the cities near Boston. There was a history of an aunt who had had typhoid fever. We asked for specimens for examination, and, of course, it takes a great deal of finesse to approach a thoroughly strange woman and get away with the request for specimens for examination and still keep negotiations open. We asked the doctor if he wouldn't do what he could in collecting the specimens from this person with a history of typhoid fever. He replied he had known the woman ten years. She was of unassailable character and therefore couldn't possibly be a typhoid carrier. Apparently, morals is a new test for typhoid carrier.

Again we are wrestling with the problem of the control of gonorrhea and syphilis. Of all problems in the field of public health, it is the most difficult because of the mode of spread. We have noticed that a number of doctors were sending in smears for

gonorrhea to our laboratory and were not reporting by number, and all the other secret data, the case to us. We wrote a very tactful letter. We approached the profession with gloves and slippers and everything else, and said that perhaps they had overlooked it, and so-and-so and so on, and would it be too much for them to report as required. What was the result? Did we get reports? No. They stopped sending smears. That is considered progress.

The other day we got a letter from a physician. We are elated with the new public health fad of undulant fever. We can't find as many cases as the rest of the states of the Union, and we are mortified. We are trying to find it. We got some blood in recently from a doctor, asking that it be examined for "indolent" fever. We replied, "It is an industrial disease from which we are all suffering."

In one of the cities I went to recently, a doctor approached me and said he didn't know how he could practice without the state board of health. I was delighted, and asked him to write it down and sign it while he was still conscious. He said, with his diphtheria, every time he had a case he gave them ten drops of antitoxin on a lump of sugar every hour. We have tried it; it has perhaps a laxative effect of some value.

In connection with our cancer work, we are disturbed beyond measure by the individual cases. A doctor recently brought in a young woman with a lump in the breast and glands in the axilla. He was delighted when the diagnosis was confirmed. He said six months before she had come in with something suspicious in the breast, but he didn't want to bother the clinic unnecessarily. He said, "I told her to come back to me in three months." Three months went by and she delayed going to see him, and it was six months before she went back. He said, "As soon as I looked at it, I knew it was cancer, and I haven't delayed a minute in bringing her in." No lightning falls from heaven!

Of course, I want to emphasize that I feel this attitude which every health officers who has gotten his hands dirty has when he is out under the stars is calamitous. There is nothing more suicidal to the progress of sound public health over the country than that attitude on the part of the health officer. Why? Because he can't get the darned thing over without the medical profession. If the undertakers or the florists or lawyers or somebody else could give the service, then let's try flirting with them. But every problem other than environmental control is based on earlier and earlier recognition, and that must come through the doctors of the community.

A second point that disturbs the health officer is the lack of medical guidance in various communities where the private organization wants to extend its service. We recommend they get a committee of doctors from the local county medical society or the local medical club to advise with them. They find the difficulty often that the committee that is appointed to advise with them vetoes everything that they suggest. They obstruct instead of guide. An example of the difficulty that is run into: In one community they wanted to start a well-child conference. A young pediatrician had just arrived. They asked if he would give service. He knew his onions and that he would have to get on with the doctors in the community. He said, "Nothing doing unless the other doctors say it is all right." They all said, "No; we all want to get in on it. Here is some advertising we want to get in on."

For two years they had a different doctor each month at the clinic. When the young pediatrician was there he was interested and he gave good service. The other man who was interested in fractures was bored to death with well children. The man interested in something else gave a rotten service. The thing limped along for two years. Then they went back to the doctors and the doctors said, "For heaven's sake, we are bored to death with it! If this pediatrician is fool enough to take it, let him have it."

That is all right; but why waste the money and the two years in finding out that, for successful service in any field, you have to have a physician whose imagination is stimulated by the job given and who isn't just a time-server at it.

A third point that bothers us is that the doctors do not realize the enormous economic advantage to them in public health today. Two years ago we had a cancer campaign all over the state. We bleated to the high heavens, and we radioed and we movied and we newspapered and we did everything that Lydia Pinkham and everybody else does. Then, after it was over, we circularized the doctors to find out how many people had come into their offices as a result of the campaign. We also had the data from the seventeen clinics over the state, and we found that there were more people coming to the doctor's private office in cities where there were clinics than where there were not clinics. Why? Because there was intensive educational work carried on in those communities. We further

found that, for every one going to the clinic, there were twenty-two going to the private office. If that is state medicine, I am a plumber.

I told a group of doctors that the state is spending forty thousand dollars in educational work in regard to cancer, essentially to fill their offices. If the barbers or the florists or the lawyers had anything like as much expenditure made by the state, they would cover us with flowers—but all the doctors do is cover us with infamy.

A friend of mine, a pediatrician, tells me it is a darned sight more profitable to him to prevent diphtheria in ninety per cent of his practice than to treat it in ten, and he doesn't have to get up at night to do it.

A good example, I think, of the thing, is a dog clinic which was held in a town outside of Boston. Rabies was rioting around the place there. (Some people who don't believe in rabies say the only examples of it are in the state department of health.) The local authorities offered a clinic three successive days; every dog that came would be jabbed f nothing, and I helped out. Let me tell you, jabbing dogs is no fun. The first that came was a mastiff. He yawned as he came in and he had tonsils like cannonballs. I never saw anything like it. But it isn't the big ones to avoid; it is the nasty little ones that will nip you when you are not looking.

We did 183, and I saw a veterinarian friend of mine at the state house. I said, "Isn't it great? We have done 183 dogs out in that town." He heaved a great, stomachy sigh and said, "I can't help but think of the $183 that might be in the pockets of the private veterinarians." I said, "Damn you, you talk like a doctor. We will circularize all the dog owners of that town, and I'll bet you we will find at least as many that have had it done privately." We circularized and found over two hundred had had it done privately. Not a soul in that town knew that dogs could be inoculated against rabies, and I don't know that they can now —science has advanced and they say it isn't any good; but never mind. Science oughtn't to advance when a discovery has been made. There ought to be legislation that it couldn't advance for ten years, to allow us to popularize it.

Here, two hundred had been done. All the people with dear little dogs watched their neighbors to see if they died; when they found they lived through it, they went and had it done privately. They never would have had it done if the practical demonstration through the health authorities of that town, free, hadn't been given.

Then there is this summer round-up all over the country. I have gone around to the medical societies in Massachusetts and talked about it, and they looked as if I were dishing out apple-sauce; their eyes get glassy and they think it is an awful bore. Yet, over the country, organizations are examining children about to enter the schools, and by the thousands are sending them back to their private physicians to get the service that is found necessary. But many of the doctors seem to be more interested in ridiculing the individual who has made the examination than in doing something for the child; but that is human nature—that can't be helped.

Then, until our throats are dry, we bleat in every instance, "Go to your physician, or to the particular service which is offered." A physician told me that if we were thoroughly honest we would say, in many instances, "Under no circumstances go to your physician, but go to the service that is particularly offered."

Professor Winslow of Yale has pointed out this rather interesting thing: that, in this environmental control business which has diminished the doctors' incomes by hundreds of thousands of dollars in typhoid, malaria, and the like, there was never a word of opposition raised, and yet, in this individualizing of public health which we are in now, which turns thousands of people over to the doctors, for some unaccounable reason a wall of opposition has risen up.

I am convinced that the people of this country, by and large, are going to seek preventive medicine where they have, over the years, sought curative medicine, and that is in the private doctor's office, as long as they get two things—one is satisfaction, and the second is service at a rate which they feel they can afford.

The advantage, then, of all this to those who will give the service that is recommended, is very great. The people who are going to lose are the backslappers—the fellows who say, "Don't get hysterical; there is no sense in doing that," and so on; because the *Ladies' Home Journal* and *Black Cat* and all the others are bleating these things and the public is getting somewhat skeptical of the reactionary physician.

A doctor said that a business man of considerable means came to him the other day and said: "Five years ago I was living out in a little town and I wanted my grandchildren to have the service I

didn't have. I asked for the name of a competent doctor and you gave it to me. Now I find the children are ready to go to school. They haven't been protected against diphtheria and haven't had vaccination, which I understand ought to be done. When the children are sick, the doctor is all right. But when I hire an engineer in my business, I don't expect to tell him where to build bridges and when to build them; I expect him to come to me and make recommendations. I want some one who will take the initiative in giving the service to my grandchildren that present knowledge says they ought to have. This fellow won't do it, and I want some one else."

A fourth point is this dreadful situation which we get into—the feeling of ownership of patients, as if they were cows or horses or what not. It seems to me it is a form of medical slavery. My father, who was, until he retired, for many years a general country practitioner in Massachusetts, told me once that he could say that anybody who ever wanted to go to another doctor had always gone with his blessing, and that he had never found it interfered an iota with his practice. Yet it is extremely difficult, this question—for instance, in our cancer clinic. The rule is that, after patients are examined, any findings are reported to their physician. How long back is "their physician"? If they say that they went last year when they had a cold, and haven't been to a doctor since, are they then at liberty, because we want to be ethical? I want to die in the profession, if I can; I was born in it.

Have they got to go back to that doctor? Suppose they say they want to go to somebody else for cancer; how far back is the darned thing? Of course, if for the same thing that brings them to the clinic they have been to somebody, all right; but it is a very difficult question, the ownership of patients, and it causes profound irritation on the part of the public.

I think it is important to realize that there is a similar situation in other professions. This medical profession isn't alone harassed with these social changes that are going on. I think most doctors think that it is themselves alone that are so harassed.

I was very much interested this year in sitting before the Committee on Legal Affairs and hearing a discussion on a bill which would limit the amount of wills and trusts that could be administered by banks and trust companies. The private lawyers were saying that these trust companies can advertise, they can solicit business as the private lawyer can't, and it is unfair competition with the private lawyer and therefore they feel it should be restrained. It seemed to me almost precisely the same sort of criticism and dissention that we find between the hospitals and clinics and the private practitioners of medicine.

Recently, an engineer, a president of one of the state engineering societies, came in. He had a letter from a fellow, protesting at the increasing amount of work that was done by state "hirelings." When a fellow calls you a "hireling," it means he is not in love with you at the moment. He said, "Perhaps it is all right for the Department of Public Works to build bridges on state roads, but on the back roads there is no darned sense in their offering their engineering service to these little towns. That is a legitimate business for the private engineer, and the state fellows ought to be kept out of it."

Then, in the Department of Health we do engineering work. We advise disposal of waste by industries as directed by law, and so on. My friend said, "I think it would be very unwise for the engineering profession to come up and appear to oppose this. They would then, in the eyes of the public, be thought to be commercially interested in obstructing it. I think that what the engineering profession can do is to guide the development of this work; it can not obstruct it."

The farmers, of course, are running into the difficulties of grouping. The individual farmer is having an awful thin time.

So it is in business. A man who runs a large dry-goods store in Boston says that they are feeling very greatly the pressure of the chain dry-goods stores. The individual unit anywhere over the country is feeling the economic pressure which comes from combinations, and it is being felt in the medical profession as well as everywhere else.

What can we learn from all this? I think it is quite apparent that the public will get whatever it wants if enough of them want it and they want it long enough. The medical profession, I think, forms about one-seventh of one per cent of the people of the country, and even in the Senate I think that is not a majority. So that there is no doubt that, in spite of the medical profession, anything that the public wants long enough, and enough of them want, will get through. An example of it was this cancer situation in Massachusetts. We said, "Wait; we don't know enough." The bill went through and one of the legislators came up to me and said, "Your department and the medical profession have had ten years to tell us what to do, and all you have

said is, 'Wait.' We have piped and all you have to do is dance." Since then we have been dancing. I have to keep my children's bellies full of food, so I am dancing; if I didn't dance, they would get somebody else to dance.

I think this is rather interesting. Dr. Richardson, who isn't a half-baked sentimentalist as I am, but who is a thoroughly sound, respected, established physician in the city of Providence, for years has been in charge of the communicable disease hospital there. Recently we took part in a symposium of the New England Medical Council on the subject of "The Relation of Clinics and Health Associations to the Medical Profession." Dr. Richardson said:

"At the present time there is a national committee of physicians, scientists, social welfare workers, and prominent laymen, who are conducting an investigation of the cost of medical care. The laity is largely responsible. Many national associations and foundations are studying this problem. What the solution will be, no one knows; but it is perfectly clear that the leadership in bringing better medical service to all the people has passed largely into the hands of the laity. Even state legislators and the national government are passing bills to make for better medical service.

"It is extremely unfortunate that physicians did not see this coming long before the laity. The American Medical Association had a wonderful opportunity many years ago to start investigating how to give better medical service to all the people. Their energies have been devoted to improving the education of physicians and protecting their interests. Efforts to make better doctors are highly praiseworthy, but those devoted to improving their financial status could have been better spent on providing better organized medical service. Had the Association grasped its opportunity, the problem might now be on the way to solution and the status of the physician would have been greatly enhanced. This holding-back attitude has cost dearly. It is only during the last few years that the American Medical Association has shown any interest in public health, and last June, for the first time, a committee was chosen by the house of delegates to study the problem of better medical service. They have started too late."

I feel very definitely, as the engineer feels, that in these commands from the people you can not obstruct, but you can guide. I have a feeling that there is something midway between the complete disorganization of private practice, as we know, and the complete overorganization of the systems which we usually call "state medicine" that are so prevalent in Europe. It seems to me that it is this: that through funds, private or public, it doesn't make any difference—they come out of the people either way, to offer in an organized way the expensive specialized service and the expensive specialized skill necessary to give this service; to have this service on call for the general practitioners of the community. Then we wouldn't see the horrid things we see now at the cancer hospital—the patient who comes in after somebody cut open his belly and closed it up. There are months that such patients have to have care; they have no money left, and they come to our hospital. Our hospital is being more and more used by the doctors of the community to send their problem cases of late middle life to, in which they suspect cancer. We give specialized service, complete gastrointestinal x-rays, radium, surgery, whatever is needed, and then send them back to their general practitioner to be watched, to be supervised, and to return to us when indicated.

The few hundred dollars are then available for the individual to maintain his self-respect and maintain his personal relationship with his general practitioner, who must be the captain of the medical ship.

It seems to me, somewhere (not only in the field of cancer, but in the field of other things) and in some way, resources and the organized special services can be utilized and still the relationship with the physician and the patient be maintained. The only question is, of course, whether the profession of the country is going to be willing to utilize this service sufficiently rapidly to meet the public demand.

We find in cancer, in the second year of the clinic, a much higher percentage of the patients are being sent by doctors than in the first year of the clinic, and that seems to us very hopeful.

In any case, we must have sincere, disinterested, factual, unemotional group thinking. Dr. Wilbur has said, in connection with the cost of medical care, that the solution, when it comes at the end of the study, must come out of group thinking—and I think that is an admirable term.

We must realize that, in the long run, the interests of the public, of the health officer, and of the private physician are inseparably interwoven.

THE CHOICE OF AN ANESTHETIC ADAPTABLE TO THE PATIENT AND THE DISEASE *

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From antiquity there comes to us the record of drug-induced anesthesia as a preliminary to surgical procedure. "Sorrow-easing drugs" and the "wine of the condemned" obtunded the physical and psychic pain of ancient Egyptians, Greeks, and Jews. Herodotus refers to anesthesia by inhalation and relates that the Scythians produced intoxication by inhaling the vapor of hemp. Empiric methods and agents, these; but they carried with them the germ of the idea of modern anesthesia. They demonstrated a forward step in advance of the primitive procedure of digital compression of the carotid artery honored in practice by the Assyrians.

Current practice in the induction of anesthesia is the reflection of experimental research, and its direct bearing on present-day methods of surgery does not await recognition. As modern chemistry, physiology and pharmacology quicken their pace, a sterner evaluation of anesthetic drugs must assuredly result. The development and progress of surgery is inseparable from the advance of anesthetics. In recent years surgery in all its branches has become less formidable from the viewpoint of the patient and the operator because of the benefits derived by both when the subject is free from pain. Not so long ago the surgeon necessarily was content when his subject was insensible to pain and remained unconscious throughout the operation. Now, the surgeon will not accept the limitations of former conditions, and he requires an anesthetic procedure which will maintain the patient's vitality and one that will, in a demonstrable manner, aid in reducing shock to a minimum. A further requisite is that during induction of, and recovery from, an anesthetic the patient shall be comfortable.

The physician anesthetist trained in the basic sciences and clinical branches of medicine can best meet these requirements of the surgeon. He may properly share with the surgeon the responsibility for the patient's safety and wellbeing. He is capable of alert and intelligent coöperation with the physiologist and chemist in their effort to recognize and develop new and better anesthetic agents. Only by the medical specialist in anesthesia can there be developed and maintained an acceptable technique in general, regional, and other forms of anesthesia. In the induction of anesthesia there are developed definite clinical phenomena, the scientific collection and interpretation of which require professional qualifications above the average standard. The administration of drugs potent enough to produce loss of sensation and consciousness requires more than medical supervision. It demands the assumption of a proper responsibility which the medical anesthetist has been trained to undertake.

Many combinations of known anesthetic agents have been tried. Some are successful; others are only partly so. Lack of success often occurs when the method has been followed as a routine. Experimental evidence definitely establishes the dictum that a satisfactory routine procedure for any particular drug that may be selected does not exist. The choice of a method of administration of the drug to be employed is governed by such factors as the general physical condition and temperament of the patient, the operation contemplated, the contraindications encountered, and the totality of modifying factors which circumscribe the particular case. It is therefore evident that a standardized procedure may not be applicable under varying conditions. Of course, if an immediate operation is necessary and gauze and an ether cone are the only equipment, ether provides an anesthetic that is best in the circumstances. The choice of an anesthetic should be adapted to the patient and the disease.

The ideal anesthetic should possess certain characteristics: (1) genuine anesthetic properties; (2) solubility in blood and in tissue; (3) stability within the organism, or by-products must be non-toxic and pass without chemical change; (4) relative inexpensiveness; (5) non-inflammability and non-explosiveness; (6) convenience for handling; (7) ease of inhalation during induction and quiet during maintenance; (8) production of relaxation; (9) absence of immediate or remote untoward effects, and (10) a wide margin of safety between respiratory paralysis and circulatory failure.

Table 1 shows a classification of the general anesthetic agents now in common use at The Mayo Clinic, and the multiplicity of characteristics which we have found each to possess. Chloroform has been omitted, since we have abandoned its use for any purpose.

* Read before the West Virginia State Medical Association, White Sulphur Springs, May 20, 1930.

TABLE 1

GENERAL ANESTHETIC AGENTS USED IN THE MAYO CLINIC

Ether	Ethylene	Nitrous Oxide	Ethyl Chloride	Acetylene	Barbiturates	Tribromethyl Alcohol	*Characteristics of an Ideal Anesthetic*
+	+	+	+	+	+	+	Genuine anesthetic properties.
+	+	+	+	+	+	+	Solubility in blood and tissue.
+	+	+	+	+	+	+	Stability within the organism (or products must be non-toxic) and passage without chemical change.
+	+	+	—	—	+	+	Relative inexpensiveness.
—	—	+	—	—	+	+	Non-inflammability and non-explosiveness.
+	—	—	+	—	+	+	Convenience of handling.
—	±	±	+	+			Ease of inhalation during induction and quiet during maintenance.
+	—	—	—	+	—	—	Production of relaxation.
—	+	+	—	+	—	—	Absence of immediate or remote untoward results.
+	+	+	—	+	+	+	A wide margin of safety between respiratory paralysis and circulatory failure.

Of the local anesthetic agents now available, procaine is the safest and the most satisfactory. Any drug capable of producing anesthesia is toxic if administered too rapidly or in excessive dosage. For this reason, it sometimes is desirable in certain types of cases and procedures to combine local and general anesthesia in amounts that will insure a minimum of each. Table 2 shows the percentage of anesthetic agents used during 1927, 1928, and 1929.

TABLE 2

ALL AGENTS USED

THE PERCENTAGE OF CASES IN WHICH SINGLE ANESTHETIC AGENTS, OR WELL-RECOGNIZED COMBINATIONS OF AGENTS, WERE USED TO THE EXCLUSION OF OTHER AGENTS *

AGENT	PER CENT 1929	1928	1927
Local	36.2	40.3	40.2
Local and Ether	0.1	0.2	0.3
Local and Gases †	8.0	9.9	11.6
Spinal ‡	5.1	1.2	0.4
Ether	15.2	16.7	19.6
Gases †	31.0	30.1	26.9
Ethyl Chloride †	0.7	0.7	0.3
Oil-Ether Colonic	0.5	0.5	0.6
Chloroform	—	—	0.03
Acetylene	0.2	0.06	—
Barbiturates	3.0	—	—
Tribromethyl Alcohol	0.06	—	—
Carbon Dioxide §	39.4	32.5	25.0

* Includes local anesthetic used for extraction of teeth, thyroidectomy, tonsillectomy, hemorrhoidectomy, and so forth. Each figure in table is computed from number of individual cases for year compared with total number of cases for the year.

† With or without ether.

‡ With or without general anesthesia.

§ Used only as respiratory stimulant.

Whenever a general anesthetic is definitely contraindicated, it usually is possible to carry the patient through the operation with some form of regional anesthesia. To certain patients with lively imagination, the thought of undergoing an operation while conscious is extremely abhorrent. If such apprehension exists, the benefits of regional anesthesia are nullified and a general anesthetic should be chosen.

Since many anesthetic procedures have been developed, the range of choice is wide, and the needs of the individual case can readily be met (Table 3).

TABLE 3

ANESTHETIC PROCEDURES

A. Pulmonary
- 1. Open-drop { Ether; Ethyl Chloride }
- 2. Closed { Ether; Ethylene; Nitrous Oxide; Acetylene (or a combination of these with oxygen) }
  - *a.* Intratracheal
  - *b.* Carbon Dioxide (rebreathing synthetic)

B. Intravenous
- 1. Barbiturates
- 2. Tribromethyl Alcohol

C. Rectal or Colonic
- 1. Oil-Ether
- 2. Barbiturates
- 3. Tribromethyl Alcohol

D. Regional and Local
- 1. Spinal
- 2. Nerve Block
- 3. Field Block
- 4. Infiltration

PULMONARY ANESTHESIA

Open-Drop Method.—All are familiar with the technical advantages and disadvantages of ether by the open-drop method. Ether is contraindicated in the presence of active pulmonary disease, severe hypertension, diabetes, and severe anemia.

Ethyl chloride offers rapid, quiet induction, but its margin of safety is so narrow that it is only exceptionally that its use is justified.

Pyogenic infections in the mouth or the upper part of the respiratory tract are contraindications to inhalation forms of anesthesia, because of the danger of aspiration of infective material.

Closed Method.—For the induction of anesthesia by the closed method we have at hand, on the modern gas machine, ether, ethylene, nitrous oxide, carbon dioxide, and oxygen. The anesthetist may therefore put the patient to sleep with one kind of gas and gradually add ether until the desired amount of relaxation is obtained. By this maneuver much

less ether is required than by the open-drop method. Lundy reported on anesthesia in 1,200 surgical procedures in the upper part of the abdomen. He compared the effects of ether by the open-drop method in 50 per cent of these operations, with the ethylene-ether closed method in the remaining 50 per cent. Post-operative bronchopneumonia occurred ether was used, and in 3.6 per cent in the group in in 1.5 per cent in the group in which ethylene and which ether only was used. Anesthesia was rated as satisfactory in 82.3 per cent of the group in which ethylene and ether were used, and in 86 per cent of the group in which ether only was used.

When skillfully induced, intratracheal anesthesia is perhaps the safest form of general anesthesia. In certain operations, such as we shall describe, it is unquestionably to be preferred. The patient is put to sleep with gas or ether, and two intratracheal catheters are introduced. The smaller catheter is attached to the gas machine from which the anesthetic mixture is obtained. The larger catheter is attached to a small rebreathing bag by means of a piece of rubber tubing. The pressure controls of the machine are set against water manometer readings so that it is impossible to build up an intrathoracic pressure beyond the limit of safety. This procedure is advantageous for operations in the mouth or around the head, where the anesthetist would ordinarily be in the way. In surgical procedures for lesions such as intrathoracic tumors, open operations, and diaphragmatic hernias, the patients are best handled in this way, as the anesthetist is assured of a free airway and he has control of the depth of anesthesia at all times. It is possible to facilitate the work of the surgeon by allowing the pressure to fall until the lung partially collapses. When the operation is finished and the pleura is being closed, the lung can be reinflated by an increase of pressure.

Carbon dioxide has proved to be a valuable aid in the giving of anesthetics by the closed method, and may be obtained by rebreathing or by the addition of a small percentage of the gas to the anesthetic mixture. By means of it, the depth of respiration may be controlled sufficiently to prevent vomiting and straining, and by the increase of respiratory depth it hastens the absorption of the anesthetic mixture.

Henderson and Haggard have published studies as to the value of hyperventilation with carbon dioxide at the close of operation as a preventive measure against post-operative pulmonary complications.

Preliminary medication plays a significant part in the success of both general and regional anesthesia. We do not like to use morphine prior to the administration of ether by the open-drop method because of the danger of respiratory depression. Before any anesthetic by the closed method is begun, morphine is of benefit. Any respiratory embarrassment can be overcome by using stimulation by carbon dioxide. Patients with an increased metabolic rate should have larger doses of morphine than normal persons.

As a preliminary hypnotic, the sodium salts of barbituric acid have given satisfactory results in doses of six to nine grains about an hour before operation. This is followed by morphine sulphate, one-sixth grain, and atropine, 1/150 grain, about fifteen minutes before operation. It is desirable in every case to give the patient sufficient preliminary medication to allay nervousness and apprehension.

INTRAVENOUS ANESTHESIA

All of the general anesthetic agents now in use must reach the blood stream either through the lungs or by absorption from contact with mucous surfaces before anesthesia can be produced. It seems logical, then, that if a suitable agent to produce anesthesia can be secured, which can be injected directly into the blood stream with safety, the entire procedure will be improved. Ether has been administered intravenously to produce anesthesia, but this method requires either constant flow of weak solution of ether and a physiologic solution of sodium chloride, or the solution of sodium chloride alone. In prolonged anesthesia this might produce serious complications.

Barbiturates.—Recently, sodium salts of barbituric acid have been furnished in pure form. When dissolved in sterile distilled water they may be administered intravenously, intramuscularly, orally, or by rectum. We have used them intravenously to produce surgical anesthesia about 750 times, and for most of the operations commonly performed. When the dose of barbiturate fails to keep the patient sufficiently quiet and relaxed for surgical procedures, it is possible to supplement it with any desired form of general anesthetic. A sodium salt of barbituric acid is given at the rate of one and one-half to two grains a minute. If the blood-pressure falls below 80 systolic, or if the breathing becomes too shallow, the injection is discontinued. Usually there is a temporary fall in blood-pressure during the injection, which returns to normal during the operation.

The advantages of the sodium salts of barbituric acid intravenously over most present general anesthetics are: (1) induction is quiet and pleasant;

(2) respirations are slow and quiet; (3) post-operative nausea and vomiting are practically eliminated, and (4) the patient sleeps from twelve to forty-eight hours after operation, with partial loss of memory of unpleasant events.

The disadvantages are: (1) there may be a marked fall in blood-pressure; (2) there may be delirium, edema of the lungs, inability to raise mucus, and even pneumonia after large doses; (3) all patients require careful nursing until entirely awake and conscious; (4) catheterization has been necessary in about 25 per cent when intraäbdominal operations were performed; (5) sloughs may occur if a 15 or 20 per cent solution is injected outside the vein, and (6) a free airway must be maintained by turning the patient on his side or by using an artificial airway.

After careful consideration of the advantages and disadvantages, it is apparent that the barbiturates offer the best intravenous anesthetic at this time However, their virtues are greatly modified by associated disadvantages which must be overcome before they will meet popular approval. This does not apply to their use in small doses as an auxiliary to some other form of general or of regional anesthesia.

Tribromethyl Alcohol (Avertin).—This agent is administered intravenously, and the induction is pleasant and rapid; but the duration of anesthesia is too short to be of much value for prolonged operations.

RECTAL OR COLONIC ANESTHESIA

This method is of value in certain cases in which it is not convenient to have any anesthesia apparatus about the head. Ether in olive oil may be used for producing anesthesia by this method. The usual solution used is ether, 65 per cent, and olive oil, 35 per cent. For producing analgesia, 50 per cent of each is sufficient. Unless the injection of ether and olive oil is preceded by some form of inhalation anesthesia, severe abdominal cramps usually will be produced. The patient may be expected to go through all the stages of ordinary ether anesthesia.

Tribromyethl alcohol in three per cent aqueous or gum acacia solution, injected into the rectum in a dosage of 1.5 c.c. for each pound of body weight, produces a quiet, rapid, pleasant induction; but, like ether and oil, it occasionally is irritating to the rectal mucosa.

The barbiturates may also be given by rectum. They will then produce the same anesthesia as they do when given intravenously or by mouth. They have the advantage over oil-ether and tribromethyl alcohol in being non-irritating. In some exceptionally nervous patients, we have administered a dose of sodium *iso*-amylethyl barbiturate by this method in the patient's room. The patients went to sleep and did not have any recollection of their trip to the operating room or of the induction of any additional anesthesia.

REGIONAL AND LOCAL ANESTHESIA

The technique of general anesthesia has given such satisfactory results to the patient and surgeon that it would seem unnecessary to employ any other method of anesthesia. However, from the standpoint of safety and comfort, regional anesthesia is often superior to any form of general anesthesia, especially in time-consuming operations.

The success of regional anesthesia depends to a certain extent on the coöperation of the patient and on the skill of the anesthetist and the operator. For convenience the procedures available under regional anesthesia have been grouped under four headings: (1) spinal, (2) nerve block, (3) field block, and (4) infiltration.

Spinal Anesthesia.—This is not a new procedure. The varying stages of popularity and disfavor which it has undergone have served to emphasize the importance of a careful technique in its administration. Spinal anesthesia offers a satisfactory method for surgical procedures below the diaphragm. In the presence of active pulmonary tuberculosis or diabetes, or in disease of the kidney, it is undoubtedly the safest anesthetic procedure available. Some of the advantages of spinal anesthesia are: (1) the technique is simple and easy of application; (2) analgesia occurs within four to ten minutes; (3) the heart is not depressed, nor is the normal function of the kidneys interfered with; (4) surgical shock is controlled by blocking off reflexes; (5) post-operative vomiting is diminished; (6) the danger of post-operative pulmonary complications is lessened, and (7) complete muscular relaxation with maximal exposure is obtained.

Some disadvantages of spinal anesthesia are: (1) the anesthesia may diminish before completion of the operation; (2) nausea may occur during operation; (3) a variable drop in blood-pressure may result, and (4) post-operative headaches may develop.

The technique which we have used for producing spinal anesthesia consists of a preliminary injection of morphine sulphate, one-sixth grain (0.01 gm.). About five minutes before the injection is made, ephedrine sulphate, three-fourths grain (0.048 gm.), is given subcutaneously. Frequently, in cases of high

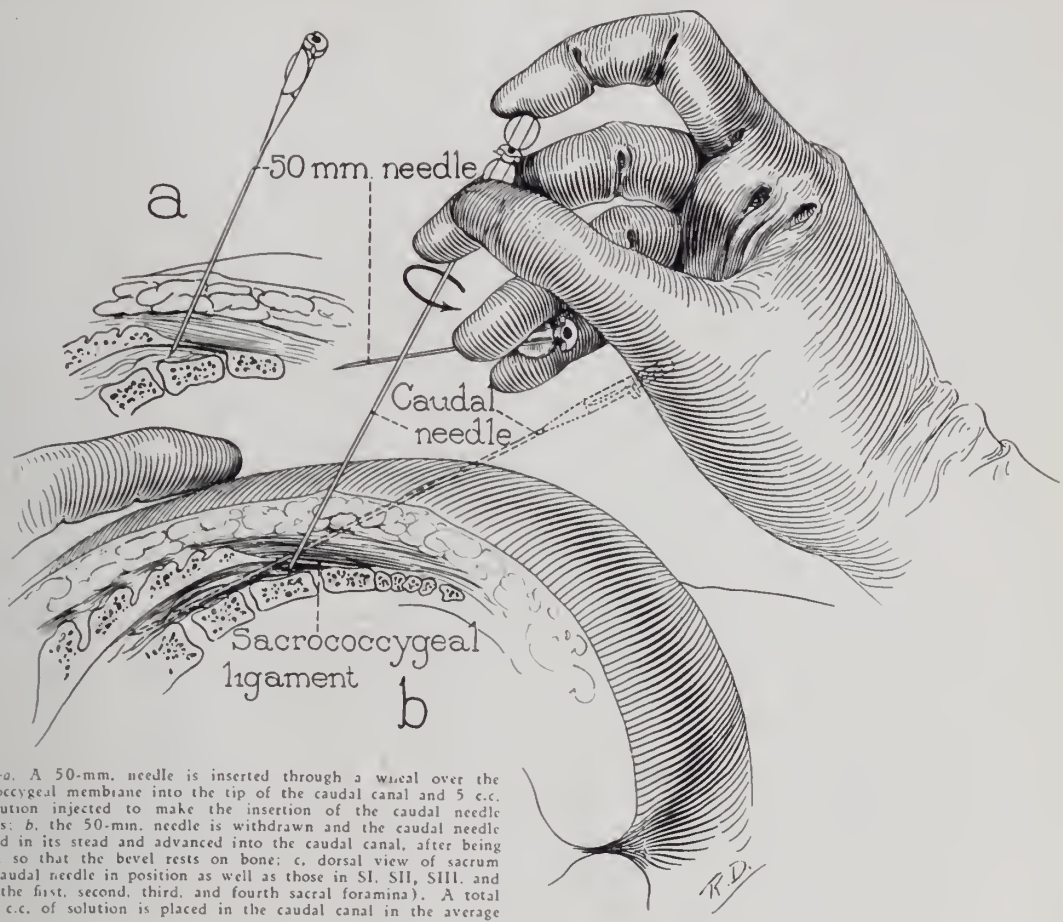
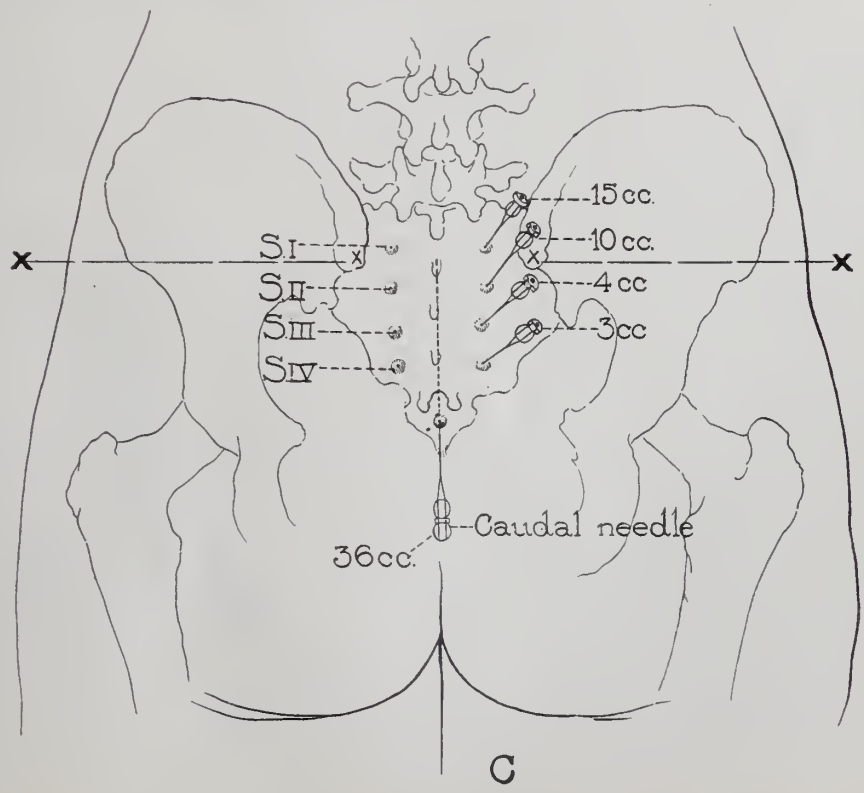


FIG. 1.—*a*. A 50-mm. needle is inserted through a wheal over the sacrococcygeal membrane into the tip of the caudal canal and 5 c.c. of solution injected to make the insertion of the caudal needle painless; *b*. the 50-mm. needle is withdrawn and the caudal needle inserted in its stead and advanced into the caudal canal, after being rotated so that the bevel rests on bone; *c*. dorsal view of sacrum with caudal needle in position as well as those in SI, SII, SIII, and SIV (the first, second, third, and fourth sacral foramina). A total of 36 c.c. of solution is placed in the caudal canal in the average case.



blood-pressure, there will be a marked drop. To prevent this complication ephedrine is used as a routine. It is safer and easier to maintain the blood-pressure at normal levels in this way than it is to attempt to elevate arterial tension after it has fallen.

The drug we used for producing spinal anesthesia during 1929 was procaine crystals dissolved in spinal fluid. The dose of procaine varied from 80 to 200 mg., depending on the condition of the patient and the duration of anesthesia desired. The chosen sites of injection were between the second and third lumbar vertebræ for operations on the upper part of the abdomen, and between the third and fourth lumbar vertebræ for operations on the pelvis or on the extremities. The level of anesthesia desired may be regulated by the amount of fluid used to dilute the procaine crystals, and by the rate of injection. Rapid injection of 5 c.c. of fluid will give anesthesia at the level of the diaphragm sufficient for surgical procedures on the gallbladder, although if the injection is made slowly 7 c.c. of fluid would be required for satisfactory anesthesia. A slow injection produces less reaction than a rapid one.

The spinal injections are usually made with the patient lying on his right side. After the injection the patient immediately is placed on his back and the head of the table is kept lowered or at least flat until the operation is completed. Whenever it facilitates the work of the surgeon, the full Trendelenburg position is employed. The patient should be changed slowly from the Trendelenburg position to prevent cerebral anemia and respiratory embarrassment. For three hours after the operation the patient is kept flat on his back and his head is not elevated. If the spinal anesthesia persists for more than three hours, the patient should be kept flat for at least an hour after it has disappeared. It must be emphasized that gentle handling of the patient in transferring him from the table to the cart is imperative. Rough handling tends to accentuate the fall in blood-pressure and frequently produces nausea.

Recently, Miescher of Basle, working with a quinine nucleus, synthesized a new substance which is alpha butyl oxy cinchonic acid diaethylendiamide hydrochloride. In Europe this has been used under the name of epercain, and in this country under the name of nupercain. Nupercain is variously estimated as being from two to five times as toxic as cocaine. Owing to its higher anesthetic properties, it may be used in much smaller doses, thereby offsetting its increased toxicity. The advantage of nupercain used intraspinally consists in the increased duration of anesthesia, which will last from three to eight hours. It is also claimed that the fall in blood-pressure is less than with procaine. We have used it with satisfactory results in a small number of cases (100) in doses varying from 5 to 35 mg. in a 1:200 solution.

Nerve Block.—By blocking the nerves at a point proximal to the site of operation, satisfactory anesthesia and relaxation may be produced. This method has the advantage of keeping the local anesthetic solution out of the operative field and the healing of the wound is not interfered with.

Of the various procedures for nerve block which are used in routine work, transsacral or a combination of transsacral and abdominal field block is used most frequently.

Numerous operations can be performed satisfactorily under transsacral block anesthesia, such as perineorrhaphy, amputation of the cervix, hemorrhoidectomy, posterior resection of the rectum, perineal prostatectomy, cystoscopic examination, and circumcision. Under combined transsacral and abdominal block, suprapubic prostatectomy, diverti-

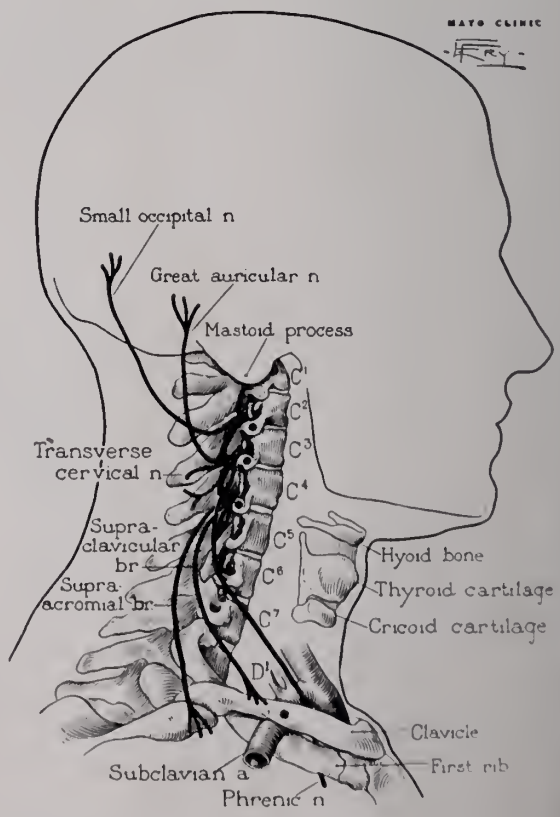


FIG. 2.—Cervical plexus in relation to transverse processes and vertebral blood vessels.

culectomy, cystostomy, and removal of tumors of the bladder may be performed satisfactorily (Fig. 1).

By blocking the second, third, and fourth cervical nerves at the point of their emergence and supplementing this with a superficial injection down the posterior border of the sternocleidomastoid muscle, satisfactory anesthesia may be obtained for surgical procedures on the neck, including laryngectomy, esophageal diverticulectomy, thyroidectomy, and dissections of the submaxillary glands (Fig. 2).

Block of the brachial plexus by the supraclavicular route furnishes satisfactory anesthesia and relaxation

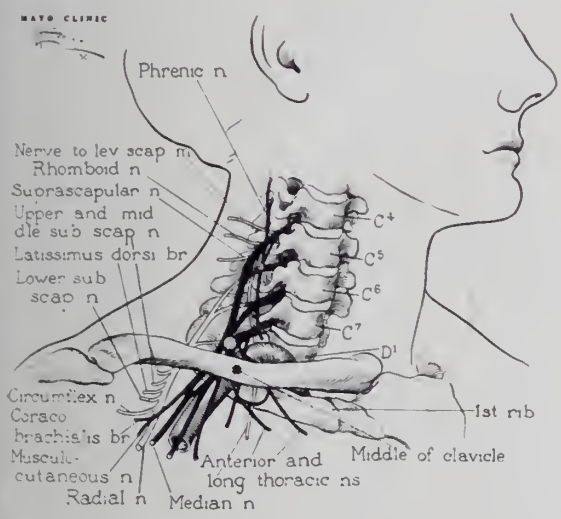


FIG. 3. Brachial plexus block, brachial plexus in relation to subclavian artery, first rib, and middle of the clavicle. The white circle is the site of injection 1 cm. above the middle of the clavicle.

for any operation on the upper extremity below the shoulder, and is of particular advantage for transplantation of tendons because the patient is able to coöperate and flex the hand or fingers as required (Fig. 3).

Paravertebral block is most satisfactory for operations on the vertebral column or spinal cord from the cervical to the lumbar region (Fig. 4).

Field Block.—Field block consists in creating walls of anesthesia encircling the operative field. The solution is distributed in such a manner as to reach all of the nerves entering the operative area. This procedure may be applied to any surface of the body, but we find its field of greatest clinical usefulness in producing anesthesia of the scalp for craniotomy and for anesthetizing the abdominal wall for intraäbdominal exploration (usually combined with gas), repair of umbilical and ventral hernia, and for inguinal herniotomy (Fig. 5 and Table 4).

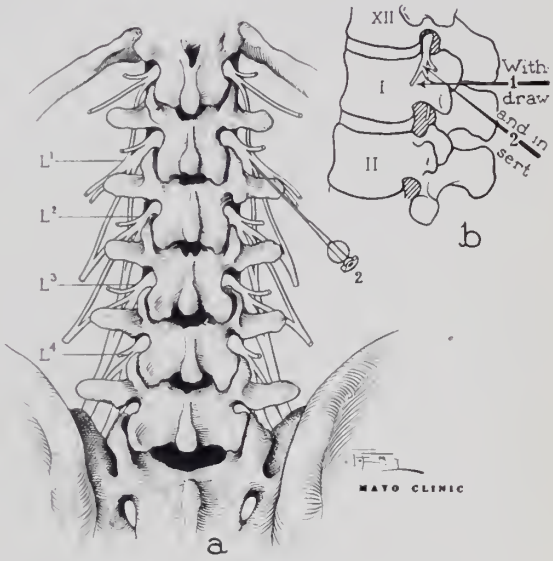


FIG. 4. Paravertebral block. *a.* lumbar nerves in relation to the spine *b.* needle is first inserted at right angles to the skin until it makes contact with transverse process, it is then withdrawn (1) and passed upward and inward (2).

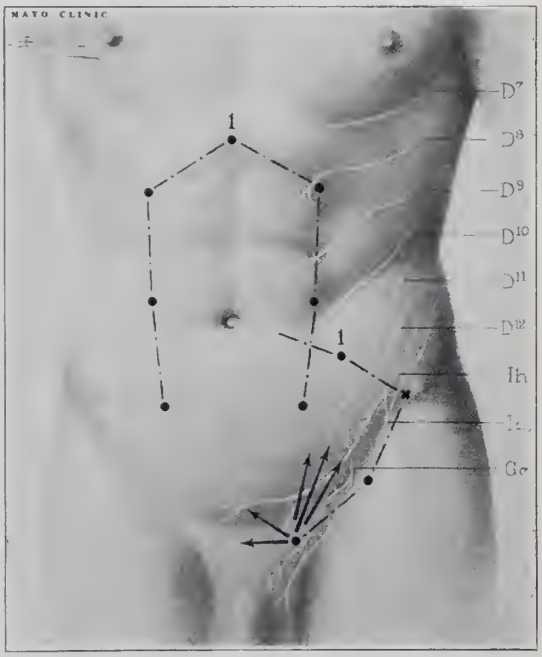


FIG. 5.—Abdominal field block and inguinal hernia field block, the dots represent site of puncture and the broken lines subcutaneous infiltration.

By whatever method anesthesia is obtained, the success of the operator and the comfort, safety, and convalescence of the patient are so intimately connected with it that its importance can scarcely be overestimated. In any given case the choice of the anesthetic is necessarily modified by the conditions encountered and by the results desired. It is indeed fortunate when the skill and experience of the anesthetist and adequate equipment permit a precise choice of anesthetic procedure. This is especially true when contraindications to ordinary methods demand a maximum of safety, a minimum of risk, and the prevention of a stormy and hazardous convalescence at any cost. The weight of evidence favors the solution of surgical problems on the basis of the individual needs of the patient no less than on the requirements of the surgeon for the conditions most favorable for his work. Anesthesia, satisfactory and safe, is a positive contribution to the solution of a surgical problem. Pre-operative, operative, and post-operative developments attest this fact with recurring persistence.

CONCLUSIONS

1. Individual needs should govern the choice of an anesthetic.

2. One method of anesthesia, to be used as a routine, is neither desirable nor necessary.

3. Procaine is the safest and best local anesthetic available.

4. Comparison of the open-drop ether method with the closed combined method of anesthesia demonstrates the superiority of the latter.

5. Clinical advantages of carbon dioxide and the barbiturates as auxiliaries of general anesthesia are demonstrable.

6. Preliminary medication is an important factor in the production of successful anesthesia.

7. Rectal or colonic anesthesia is of definite value, especially in operations about the head.

8. Regional anesthesia and spinal anesthesia are safe, lasting, and efficient. When administered with careful technique they meet the requirements of the special and general surgeon.

Discussion

DR. ELDON B. TUCKER (Morgantown): It has, indeed, been a great pleasure and also very instructive to me to hear Dr. McCuskey's paper today on the selection of the anesthetic, being guided in this selection by the type of disease and the type of operation to be performed. There are two requirements that are essential before there can be any judicious selection. The first is that there must be a number of drugs or anesthetic agents from which to make the selection. The second requirement is the service of a competent anesthetist. Without this second requirement, the first is of very little value. The Mayo Clinic has both of these requirements, besides having plenty of patients to use them on.

The anesthetist is not made in a day. Very little concerning anesthesia has been taught the average medical student until the last few years. As an interne he gets very little experience that is of value. The larger and better regulated hospitals do not permit the interne to give anesthetics, and in many of the smaller ones they are permitted to give anesthetics indiscriminately and with little or no supervision. The giving of anesthetics is an art, and the anesthetist should be a specialist in that line of practice.

TABLE 4

REPORT OF REGIONAL ANESTHESIA FOR 1929

BLOCK	Cases	Untoward Reactions: Marked, Per Cent	Untoward Reactions: Slight, Per Cent	Intentionally Combined, Per Cent	Operation Not Performed, Per Cent *	Remaining Cases	Anesthesia, Per Cent: Satisfactory	Anesthesia, Per Cent: Fair	Anesthesia, Per Cent: Poor	Necessarily Combined
Abdominal	407	—	—	45.7	—	220	85.9	3.6	0.4	10.0
Brachial Plexus	18	—	—	16.6	5.5	14	85.7	—	—	14.2
Cervical	168	1.1	—	13.6	—	145	85.5	4.1	1.3	8.9
Field Block	259	—	0.3	5.7	0.3	243	93.8	1.6	0.8	3.[illegible]
Infiltration	174	—	0.5	6.8	0.5	162	94.4	1.8	0.6	3.0
Intercostal	3	—	—	—	—	3	66.6	—	—	33.3
Paravertebral	28	—	—	25.0	—	21	90.4	—	—	9.5
Transsacral	947	1.4	1.6	3.8	0.7	904	96.5	1.6	0.2	1.5
Sacral and Abdominal	126	3.1	—	0.7	0.7	121	89.2	4.9	—	5.7
Spinal	1,083	6.2	8.6	4.8	—	1,030	91.6	1.5	0.1	6.6
Total 1929	3,213	2.7	3.4	10.5	0.3	2,863	92.6	2.0	0.3	4.9
Total 1928	3,023	0.7	2.3	15.9	0.3	2,531	90.4	3.9	1.2	4.3
Total 1927	2,679	1.9	2.2	21.3	0.3	2,098	92.4	3.9	0.3	3.2

* In most of these cases the injection was made for diagnostic purposes.

How shall we have better anesthesia in West Virginia? First, by getting more physicians interested in anesthesia as a specialty, by their taking special work in anesthesia, by their regular attendance at anesthesia meetings, the Congress of Anesthetists and the regional anesthesia meetings, and by their subscribing to and reading the journals on anesthesia and analgesia. Second, we will have better anesthesia in West Virginia when the surgeons of this state show more coöperation and appreciation for the services of a regular anesthetist.

The day should soon come when the family physician will cease to be called upon to give an anesthetic in a hospital for a major operation. There is but one reason why he is called upon for this service, and we all know why he is called. Is that fair to the patient? Would you want to take your family physician along with you to give you your anesthetic at the Crile Clinic or at The Mayo Clinic?

In many cases the selection of the anesthetist and his selection of the anesthetic agent is of much more importance to the patient than the selection of the surgeon. With the selection of the family physician or the general practitioner to give the anesthetic, there can be no selection of the anesthetic agent to fit the disease or the type of operation.

At the last Congress of Anesthetists meeting in Chicago, in October, 1929, Dr. McCuskey read a paper on "Spinal Anesthesia in Surgical Procedures on the Colon." Since then we have had one case with an adenocarcinoma of the transverse colon with perforation, to which I gave a spinal anesthetic. The patient made an uneventful recovery from the operation. He was operated upon April 27, 1930, and was discharged from the hospital May 18, 1930. The operation consisted of appendectomy, resection of transverse colon. We cut out a perforated ulcer mass and a large piece of ulcerated omentum. Gas was given twenty minutes at the beginning of the operation.

At this Chicago meeting the question of giving spinal anesthesia in a perforated gastric or duodenal ulcer case was discussed. This form of anesthesia was looked on with favor by many, even though The Mayo Clinic does not recommend it. On February 2, 1930, I gave a spinal anesthetic to a white man, aged forty-six, with a perforated duodenal ulcer. The anesthesia was perfect, with relaxation of the abdominal wall but with contraction of the musculature of the intestines. The operation was excision of ruptured duodenal ulcer and pyloroplasty. No distention or nausea or vomiting was noted. The patient developed a subdiaphragmatic abscess, which was opened and drained under spinal anesthesia on February 27, 1930. Had some chest complications, but had cold and cough before operation. Since there is very little distention and no paralysis of the gastrointestinal muscles under spinal anesthesia, it would appear to me to be the anesthetic of choice in many acute perforations, as also in many other abdominal conditions. Spinal anesthesia certainly makes a paradise out of the abdomen, from the surgeon's viewpoint. For ruptures, hemorrhoids, and any operation on the lower extremities, spinal anesthesia certainly is ideal.

Avertin will find a place as an anesthetic for operations on the head, neck, and chest. We have used it for a goiter operation, decompression of the skull, long-standing depression, frontal sinus operation, and for an Albee bone graft for tuberculosis of the spine. I would like to report this last case. The patient was a white man, aged sixty-six, with extensive involvement of the third to seventh vertebræ. On April 24, 1930, he was given this anesthetic in bed, and after going to sleep he was removed to the operating room, placed in the anterior half of his cast, face down, the cast being on the operating table. In that position he was operated on. He had good anesthesia for two and one-half hours, and awoke about two hours after the operation was over. He did not have any other supplementary anesthetic and showed no circulatory depression. He was given about 110 milligrams per kilo of body weight. No complications developed, and he is so far making a satisfactory recovery.

I have used sodium amytal just four times—twice for patients in convulsions and twice for operations. The first convulsion case was a young woman who had had convulsions off and on all night. At about eight-thirty in the morning, when I gave her the sodium amytal, she was in convulsions, was cyanotic, and had an acute edema of her lungs. The convulsions stopped at once. She slept for about twenty-four hours, and in the meanwhile it was found that she had a positive Kahn spinal-fluid test, even though the blood gave a negative test. When last heard from, she was doing well.

The second convulsion case was a post-delivery convulsion of eclampsia. When the sodium amytal was given, she had been in convulsions for forty-five minutes. This convulsion and all twitchings stopped in four minutes and the patient made a successful recovery with no more convulsions.

The other two cases were a thyroidectomy and a

gastrotomy. In the nervous type of patient, especially in goiter surgery, sodium amytal will be found useful. If a long post-operative sleep or semi-comatose state is undesirable, it should not be used. Avertin, which is given per rectum, would work better in these cases, as the post-operative sleep is not so long. A supplementary anesthetic, such as nitrous oxide with a high percentage of oxygen, is recommended with both of the above-mentioned new anesthetics.

Ether will remain the anesthetic of choice in many localities, due to the ease with which it is administered, its wide margin of immediate safety, and its inexpensiveness, as well as its ability to produce relaxation.

Chloroform and ethyl chloride are usually mentioned just to be condemned. However, chloroform is, no doubt, today used in the home for obstetric analgesia almost as much as it ever was. Ethyl chloride is recognized as a dangerous drug; but, where time is an important item, it is often used to cut down the induction stage. In my opinion, nitrous oxide should be used instead of ethyl chloride as an induction anesthetic.

My general practice, in the usual inhalation anesthesia, is to start off with nitrous oxide. If a deeper anesthesia or more relaxation is required, I switch over to ethylene and oxygen. Ether may be added to this mixture, or the ether may be added to the nitrous oxide and oxygen. At the finish, if ether has been used, I give the patient ten per cent carbon dioxide in oxygen to stimulate respiration, expand the lungs, and hasten the elimination of the anesthetic agents. Probably ninety to ninety-five per cent of all surgical procedures could be carried out under this method of anesthesia. However, if an improvement can be made here or there, it should be done. The immediate recovery from the anesthetic and operation is not all. If lasting damage to some vital organ may be done by an inhalation anesthesia, then some other less toxic agent should be employed. If a combination of anesthetics offers less chance of complications, they should be used. The immediate and future safety of the patient should always be kept to the front. The patient' welfare should be our main concern.

DR. A. P. BUTT (Elkins): One thing I have been struck with is the difference in the anesthetic of today at The Mayo Clinic and of a few years ago. It wasn't so many years ago when it looked to me it was all ether. It is just since Dr. Lundy and Dr. McCuskey have been there that there has been so much change.

From Dr. McCuskey I learned the use of amytal and transsacral anesthesia. The amytal we have used about a year and like it very much. Of course, it has its shortcomings; but so do they all.

I first gave a spinal anesthesia in April, 1900, having learned its use from Dr. Babcock, and have never given it up.

I was struck with the comments of Dr. McCuskey on ethyl chloride. Of course, I had always looked on it as a dangerous drug. About a month ago I happened to have business in Bellevue Hospital, where they do an enormous amount of tonsil work. The doctor I had this business with was in that department, and I spent an afternoon with him. I found they were inducing anesthesia in all these children with ethyl chloride. I don't remember just how long he had been usng it.

I see the doctor has buried chloroform, and I suppose it will have to stay there. (I don't mean it offensively.) I don't think that chloroform is very dangerous, but there is none used in my hospital when I am away. When I leave the hospital, the chloroform bottle is locked up. I think very few people know how to administer it. I frequently give it to children before the ether. I always give it to little children for reduction of fractures, when I can do it myself, or one of the nurses I have personally trained. I never let a young doctor do it.

I should like to have added a little to the title of the doctor's paper. He took into consideration the type of operation and the patient, but he didn't say anything about the operator. Why shouldn't he be taken into consideration also? For instance, while I am very quick in almost everything, I am slow in operations. That is my trouble with spinal anesthesia. I am afraid it will run out before I am through. In a multiple pelvic operation, it is a lot of satisfaction to give a caudal, transsacral, and abdominal block anesthesia, and then go ahead, knowing one has all day, if necessary. This is quite a comfort to me. The man who is very rough has no place with local anesthesia. It seems to me it would be an excellent thing if all young surgeons had to learn to use local anesthesia. You can't pull and haul and drag while using that. Of course, I don't refer to spinal, but the local use of novocain.

It is very hard for me to say in advance what particular class of patients is going to take to local anesthesia. The doctor, I believe, has illustrated this

very much by saying that a red-headed Texas rabbi would be a bad subject. He thinks that the fair-haired southerners and people of certain religious beliefs take rather badly to it. So a red-headed Texas rabbi, would be better asleep.

I am inclined to believe the more intelligence a person has, the better he takes a local anesthetic; and the less intelligence he has, the worse he is. I am awfully sorry to say I can't get up much enthusiasm in my little place for local anesthesia. They don't come back and ask for it; they will ask for ether. I don't know why, but they don't seem to be impressed with local anesthesia.

The day of the one anesthetic is gone, and I think it is forever gone. We have fifty-seven varieties now, and they are all good—and some better.

DR. J. E. CANNADAY (Charleston): I will say that Dr. Butt, so far as I know, is the pioneer in West Virginia in both spinal and sacral as well as transsacral anesthesia. Dr. Butt has been interested in these things for many years. It seemed to me that the main point, after all, is not to be a faddist and not to be sold on any one type of anesthesia, but to appreciate the fact that all of them have merit, and that you should fit the anesthesia to the needs of the patient.

There are so many complications and so many reasons for choice along different lines that judgment must be used as to what anesthesia the patient has. Even the patient's desires cut some figure—in some localities, at any rate.

In the use of local and regional anesthetics, I believe that much depends upon the temperament of the patient and much depends on how thoroughly the patient has been doped up and led up to the procedure, step by step. Certainly, in emergency work, ether is a reliable old standby. If you can plan your operation and lead up to it, get your patient ready beforehand, have a few hours to plan it in, get everything going, many of these other things are magnificent in their results.

I have had some experience with amytal, and I agree with the others that it has a very useful field. I have not used avertin, but expect to. We have some of it on hand. I like to see all the good anesthetics used, and I try to make use of all of them, with the exception of chloroform. I took my interneship in Richmond, Virginia, in 1901 and 1902, and at that time chloroform was the standard anesthetic. Dr. Edmond L. Hobson, of Richmond, was the famous chloroform anesthetist of the day. He had a record of many thousands of chloroform anesthesias without a single death. After he passed middle life he lost a patient on the table, and I understand he gave chloroform up. He was even so deeply impressed that he took to ether. As recently as 1901 there was only one doctor in Richmond who knew how to give ether. That was our now well-known röntgenologist, Al Gray. He used to be called on when somebody wanted ether anesthesia.

Spinal anesthesia is coming, and I think we are all using it more and more. Its field is growing. There is one particular classification in which spinal anesthesia is very useful—that is now and then when we have to operate on a pregnant woman. We want to handle her in such a way as to avoid danger of abortion or miscarriage, if possible, and I believe that spinal anesthesia helps us out there. I have even done a successful gallbladder operation under spinal anesthesia on a woman in an advanced stage of pregnancy, without the slightest disturbance, and we have found it very satisfactory.

DR. MCCUSKEY (*closing the discussion*): Dr. Norris asked concerning the comparison of post-operative nausea with acetylene and ethylene. It is probably less with acetylene, if you obtain the pure gas; otherwise I think there is very little difference.

I agree with Dr. Norris that one of the difficulties we have had with amytal is that the patients who have had it like it so well they tell others they should take that anesthetic. They don't remember going to sleep, and lots of times the patients will come up requesting amytal when we don't think they should have it.

I think Dr. Butt's criticism about taking into consideration the operator when choosing an anesthetic is very well taken. However, for the slow operators, if the nupercain works out as successfully as we hope it will, where we obtain an anesthesia lasting from three to eight hours, I think we can take care of the slow operators with spinal, for abdominal work at least.

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AGRANULOCYTOSIS *

(WITH REPORT OF THREE CASES)

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During the last decade we have had at least three diseases brought to our attention about which we before knew little or nothing—tularemia, undulant fever, and agranulocytosis. Until 1922 [1] the disease or condition called agranulocytosis had not been described in all the literature. It is characterized by an extremely low leukocyte count, with a complete or almost complete disappearance of the polynuclear cells and a fairly well-defined clinical picture. I believe that "agranulocytosis" is a better term than "agranulocytic angina," by which name it is often known, because several cases have been reported in which there was no angina.[2]

CASE I.—G. B., male, aged 30, a boilermaker, was admitted to the hospital on July 4, 1927, complaining of soreness of the mouth and throat, and general weakness. These symptoms first appeared sixty-three days previously, with small blisters around the lower molar teeth, which soon spread until the entire lower gums were involved. Ten days after the onset, during which time a dry cough developed, the right side of the throat became sore, followed in several days by an abscess which ruptured spontaneously. He was in bed the following four weeks, during which time four doses of neosalvarsan were given, with no improvement resulting. He lost forty pounds during the illnesses, and was at all times very weak. Until the present illness he had been in excellent health.

Physical examination on admittance showed a well-developed, acutely ill patient, very pale, with a pulse rate of 130, blood-pressure 108/54, temperature 102°, and respirations 22. There was a marked fetor oris; the throat showed a small, deep, gray ulceration at the lower border of the right tonsil, with little induration and no granulations. There was little cervical or other glandular involvement. A systolic bruit at the apex of the heart, coarse râles and a friction rub at the left base, and a barely palpable spleen were noted.

Laboratory examinations: July 5, 1927, the blood Wassermann and Kahn were negative: the throat smear showed many mixed bacteria but no Vincent's, the gum smear showed the same; cultures were negative for diphtheria. The urine was normal. The average of four blood examinations over a period of ten days showed: Hemoglobin 6.5 gm. (35%), erythrocytes 2,010,000, leukocytes 1,300, polynuclears 7%, lymphocytes and monocytes 93%, sugar in blood 80 mgm. per 100 ml., non-protein nitrogen 38 mgm. per 100 ml., and creatinine 1.7 mgm. per 100 ml.

Course of the disease: The temperature was remittent, from 99° to 105°. The patient continued to grow weaker, and complained of increasing sore throat. Three blood transfusions, totaling 1400 ml., were given at four-day intervals, with no definite change for the better. Ten days after his admittance the throat showed a tremendous extension of the ulceration, the entire right tonsil had sloughed, and the necrosis had extended to the pillars and the soft palate. The color was now almost black, with a definite line of demarcation. The necrosis continued to spread; his condition became gradually worse, so that he died on July 16, seventy-nine days after the onset.

The examination of a piece of the necrotic tissue removed from the pharynx after death showed the following changes proceeding from the oral to the nasal surface: A zone of necrosis from 1 to 3 mm. thick, taking only the eosin stain, absolutely acellular, with occluded blood-vessels containing a fibrin-like material. Next there is a thin layer of fibrous tissue in which the nuclei take a good stain; some blood-vessels are here occluded by fibrin, others are patent and show a swollen endothelium. This layer is mildly invaded throughout by lymphocytes and a few plasma cells, but they appear not as in an inflammation, but scattered in a purposeless fashion. Polynuclear cells are very scarce, being estimated as 1 to 2,000 other cells. There is no perivascular infiltration nor giant cell formation. Next the mucous glands, which are normal; then the fibrous trabeculæ, and the normal nasal mucosa.

CASE II.—F. W., a male, aged 52, a dealer in plumbing supplies, was admitted to the hospital on November 12, 1928, complaining of an infected thumb, loose teeth, and sore gums and lips. He had been in good health until 1923, when he had hemorrhoids and cystitis. In 1926 he had quinsy, following which his tonsils were removed. During the last summer he had three attacks of so-called influenza, the last one accompanied by pneumonia. His present illness started one week before entering the hospital.

Physical examination showed a restless, thin male with a marked fetor oris. The temperature was 102°, pulse 95, and respirations 22. The throat

* Read before the West Virginia State Medical Association at White Sulphur Springs on May 21, 1930.

was normal, the lower gums soft, a considerable portion being separated from the teeth, and the margins necrotic. Four teeth were extracted, but no root abscesses were found. The heart, lungs, and abdomen showed nothing abnormal. There were no petechiæ.

Laboratory examinations on November 14, 1928, showed a normal urine. The blood count showed: leukocytes 6,650, erthyrocytes 4,290,000, hemoglobin 90%, coagulation time 7 minutes, polynuclears 19%, lymphocytes 77%, monocytes 2%, eosinophiles 2%, icteric index 14.

Course: He left the hospital in six days, but the gums were very slow in healing and he did not regain his former strength. On February 12, 1929, he felt unusually weak, so consulted his physician, who found a temperature of 99°. The following day he had a severe headache, and pain in the right chest, with extreme weakness; the sore gums were now a secondary complaint. On the chin there was a red, slightly indurated papule 4 mm. in diameter, from which a small amount of clear yellow serum exuded. Several similar lesions were on the forearms.

On February 15 he was readmitted to the hospital with exaggeration of his complaints. At this time he developed a cough, accompanied by a bright red, blood-tinged expectoration, an excruciating pain in the right chest, and marked cyanosis. There was definite consolidation of the right lower base with tubular breath sounds and showers of coarse and fine râles. The heart was rapid and feeble, rate 140. The temperature was now 105°. The papule on the chin had so increased in size overnight that the entire chin was swollen and red, with a copious exudate of clear yellow serum, with no tendency to pus formation. At 4 P.M. he was given a blood transfusion of 500 ml., but he continued to grow worse and died at 11 P.M.

Laboratory examinations: February 14, 1929, blood showed hemoglobin 65%, leukocytes 850, polynuclears 0.5%, small lymphocytes 92%, large lymphocytes 2.5%, monocytes 2%, unclassified non-granular cells 2.5%, irritation forms 0.5%. Only 3.5% of the lymphocytes contained azure granules. The small lymphocytes were of two kinds: (1) The majority showed little differentiation between the nucleus and the cytoplasm, the latter being very narrow, taking a medium blue stain. (2) Those with violet stained, round or oval nuclei and a dark blue cytoplasm, the size of normal lymphocytes. Blood cultures, planted in two flasks of glucose brain broth and in an agar pour plate, showed an abundant growth of a non-hemolytic staphylococcus albus when examined the following day. Cultures from the serum exuding from the lesion on the chin showed a pure culture of the same organisms in large numbers. Smears of the exudate showed no polynuclear cells. Permission for a necropsy could not be obtained.

CASE III.—N. C., male, baker, aged 18, was admitted to the hospital on April 2, 1929, with a temperature of 101°, pulse 120, and respirations 25. His family history was of no importance. During the last year he had received treatment for syphilis at the city clinic, arsphenamine being employed. For years past he had noticed an excessive amount of bleeding from minor cuts and injuries.

His present illness began with a toothache four days before entering the hospital, for which a dentist extracted a lower left molar. The following day there was continuous bleeding from the socket, which persisted in spite of all treatment. The jaw became swollen and painful.

Laboratory examinations: The urine was cloudy, acid, with a considerable amount of albumin, no sugar, and a few erythrocytes. The leukocytes were 1,050, polynuclears 0.5%, small lymphocytes 92%, large lymphocytes 2.5%, monocytes 2%, pathologic lymphocytes 2.5%, irritation forms 0.5%. Only 3.5% of the lymphocytes contained azure granules; hemoglobin 32%.

Physical examination showed a very pale, thin, toxic young man. There was a pale, coppery rash over most of the body, and a moderate number of purpuric spots. The socket from which the tooth was extracted continued to ooze; it was ragged, surrounded by an area of necrosis, with marked fetor oris. There was moderate swelling of the glands at the angle of the jaw. The scleræ had an icteric tint. The chest and the abdomen showed nothing of an abnormal nature.

The tooth socket continued to bleed, and his condition became rapidly worse. The left arm became swollen and edematous following an injection of fibrogen. At 11 P.M., when he was almost moribund, he was given röntgen-ray therapy according to Friedmann's technique, and at 2:30 A.M. he died.

Post-mortem examination: The skin and the scleræ have a definite icteric tint. There is a marked degree of edema over the entire left arm and shoulder. The subcutaneous tissue is scant; the muscles are pinkish-red. The left lung is moderately congested posteriorly, but is crepitant throughout. The right lung is normal.

The pericardial sac, when opened, shows numerous punctate hemorrhages on both the parietal and the visceral portions. The left side of the heart is firm, the right side flabby, the muscle is dull in appearance and friable. The aorta is soft; there are many yellow plaques in the region of the coronaries, both of which are fully patent. The valves are normal. The spleen is dark red and slightly enlarged; the liver shows a marked cloudy swelling, the right lobe extending to just below the costal margin. There are numerous punctate hemorrhages in the mucosa of the stomach, and a few in the small intestines. The left kidney also shows similar hemorrhages. The right kidney shows an extensive subcapsular hemorrhage, and numerous smaller in the substance, especially in the cortex.

Necrotic areas are seen at the upper pole of the right tonsil, on the left buccal mucosa, the adjacent gum, and on a small portion of the lower lip. The bone marrow from the tibia is yellow, with occasional islands of red. There is a marked diminution in all of the cellular elements.

Discussion.—The three cases here reported all show extreme reductions in the number of leukocytes, the reduction being almost entirely at the expense of the granular or polynuclear cells; but they differ in some respects which should be noted.

The first patient showed the typical features described by Schultz,[1] with these exceptions: the duration was sixty-three days instead of three to five days, and there was a marked secondary anemia.

The second patient suffered a mild attack, followed by partial recovery. This corresponds to those recurrent attacks described by others (Schultz,[3] Gundrum,[4] Jedlicka,[5] Hutcheson[6]). At this time the blood culture was negative, and the unusually low leukocyte count and the low percentage of polynuclears in relations to the fever was noted. Three months later this was followed by the rapidly fatal attack, in which the blood culture showed large numbers of staphylococcus albus. Anemia was not a marked feature.

The third patient is more difficult to classify, inasmuch as he had syphilis and had been treated with arsphenamines, which sometimes cause a marked reduction in the number of granulocytes.[7] The arsphenamine may have played a rôle in the etiology; but the onset following a tooth extraction, the clinical and the post-mortem findings, rather definitely class it as agranulocytosis. These features are to be noted: the marked anemia, the mild jaundice, the purpura, and the bleeding from the gums which failed to respond to treatment.

In the study of these cases, and of 135 others which have been reported, the following brief résumé is given:

Females are affected three times as often as males. The throat or mouth lesion has usually been diagnosed as either diphtheria, Vincent's disease, streptococcic sore throat, or syphilis. Whenever these diseases are suspected, but can not be proved by proper diagnostic methods, or become worse in spite of treatment, agranulocytosis is to be considered and a blood examination made.

The average leukocyte count in 48 cases was 1,180, with always a relative lymphocytosis and a polynuclear count of 10% or less. The first count may not show such a typical picture. If not, counts on following days will always reveal the true nature of the malady.

In making a differential diagnosis, one must consider:

1. Diphtheria; proven by smear or culture of the membrane.

2. Vincent's disease. Here one may find the organisms in large numbers; but, even so, if the illness be more severe than with the usual Vincent's, and if treatment be followed by no improvement, an accompanying agranulocytosis should be suspected.

3. Syphilis. The serological examination, together with the clinical findings, is sufficient.

4. Streptococcic sore throat. Bacteriologically, this differentiation can not be made, as agranulocytosis frequently shows streptococci in large numbers. However, a blood count will immediately reveal the difference.

Diseases which offer more difficulty in the hematological diagnosis are aleukemic leukemia, infectious mononucleosis, thrombocytopenia, and aplastic anemia.

Regarding aleukemic leukemia, the lowest leukocyte count I have been able to find was reported by Lyttle and Rosenberg—2,900, with 25% polynuclears—but subsequent counts brought the average of this case up to 5,100, with 43.6% polynuclears.[8]

Longcope,[9] Lyttle and Rosenberg,[8] and Baldridge[10] have collected 85 cases of infectious mononucleosis with 245 blood counts. The leukocytes averaged 11,466 with 40.7% polynuclears and 59.3% mononuclears. The lowest total count was 3,000, which with subsequent counts was brought up to an average of 8,580 with 50.5% polynuclears. It is thus seen that the highest counts in agranulo-

cytosis are not as high as the lowest ones obtained in aleukemic leukemia and infectious mononucleosis.

I leave thrombocytopenia and aplastic anemia to the last in order that we may discuss them more closely together. Let us review the physiology of the bone marrow, whose function is to produce blood elements of three different orders: First, the granular leukocytes, or polynuclear cells; second, the platelets, which are formed from the megakaryocytes; and, third, the erythrocytes.

Etiology.—A toxin which paralyzes the granulopoietic system, or a primary disease which affects the same system, results in agranulocytosis. The nature of this toxin is not yet clear; indeed, some suggest that it is a disease of the bone marrow *per se*,[11] and that the ulcerations are simply the invasions of organisms normally present, due to the lowered resistance. Others favor the view that there is a specific but not yet isolated toxin,[12] or that there is a closer relation between the necrotic membranes and the disease than had at first been supposed, the toxin arising from the necrotic tissue.[13]

Recently, Kleeberg[14] has shown that in rabbits deprived of leukocytes by the injection of thorium X an abundant growth of streptococci is permitted, when the same dose of the organisms in a normal rabbit produces no effect. This explains how agranulocytosis is so frequently accompanied by invasions of common organisms. While it is easy to produce a granulopenia by thorium or benzol, it is very difficult to produce the necrotic lesions. The inoculation of blood from a case does not reproduce it in animals. The malady is essentially, from the clinical viewpoint, a toxic infection with a necrotic exanthem.

A toxin which paralyzes the system which produces the megakaryocytes results in the lowering of or the disappearance of blood platelets, producing thrombocytopenia, which, as Piney notes,[15] may be taken as the mildest form of myeloid aplasia.

A toxin which paralyzes the erythropoietic system or causes the erythrocytes to be retained in the bone marrow produces anemia.

A toxin which paralyzes all three systems at the same time produces aplastic anemia, or myelophthisis.

In consideration of these facts, I believe, with Philiptschenko,[16] that agranulocytosis can be divided, according to the blood examination, into three groups:

1. One involving only the granulopoietic system, the erythrocytes and the platelets remaining unchanged, a pure agranulocytosis.

2. One with pronounced anemia besides the leukopenia, but with normal platelets, and no manifestations of hemorrhage.

3. One in which the entire bone marrow is involved, resulting in a diminution of granulocytes, erythrocytes, and platelets.

Pathology.—There are always necrotic areas in some location; if not apparent upon the clinical examination, the post-mortem will show them in the esophagus, stomach, or other part of the intestinal tract.[17] Peyer's patches are usually affected, but perforation has not been noted. The liver is normal or slightly enlarged. The kidneys are variable, showing mild to severe cloudy swelling, and sometimes diffuse hemorrhages. The necroses are well limited microscopically. One does not see a polynuclear infiltration or other inflammatory reaction. The blood vessels are more or less degenerated and thrombosed. The spleen is often congested, sometimes with small necrotic spots. The bone marrow contains no granulocytes, and varies from red fatty and yellow, according to the hemopietic systems involved. The liver often shows areas of degeneration, which may account for the jaundice seen in many cases. Bronchopneumonia is a frequent complication, and is exudative, fibrinous, and hemorrhagic, with no granular cell infiltrations.

Complications.—One is struck by the many cases which have followed tooth extractions, often with oozing of blood which has been difficult to control. Purpura and jaundice appear frequently; also pneumonia and pleurisy—the latter sometimes being one of the earliest findings. Throat and gum lesions may be found in all stages from redness to gangrene. Herpes is frequently present.

Treatment.—Many different types of treatment have been employed, including the arsphenamines, blood transfusions, with which Jagic[18] reports a cure; concentrated antistreptococcic serum, with which Zikowsky[19] reports two cures, and the röntgen ray. By far, the best results appear to have been obtained with the latter. Friedmann reports four cures, and Hodges *et al* one.[20] The technique described by Friedmann[21] consisted of 1/20 unit skin dose deep therapy, filtered through six-tenths-millimeter copper, applied daily for a duration of two minutes, first over the long bones of the lower extremities, followed by similar treatments over the upper extremities. As they point out, little if any benefit can be expected when the blood-stream is invaded.

The treatments are followed in a few hours

usually by a reduction of the leukocytes, with the appearance of a few granular cells of myelocytic origin, later by the appearance of polynuclears in increasing numbers and an increase in the total count.

SUMMARY

Three cases of agranulocytosis are reported, all of which resulted in death, and the reports of 135 other cases are studied. Of these, 19 recovered and 116 died, giving a mortality of 85.8%.

The various forms of treatment employed have proved of little value, with the exception of the röntgen ray, which appears to be the best method so far used.

A large majority of cases begin with mouth or throat lesions, which are mistaken for diphtheria, syphilis, Vincent's disease, or streptococcic sore throat. A patient suspected of having any of these, but in whom the diagnosis can not be confirmed by the proper methods, or who does not properly respond to treatment, should have a total and differential blood count to determine the existence of agranulocytosis.

Discussion

DR. ALBERT H. HOGE (Bluefield): I want to assure you that I appreciated very much this very comprehensive report and study given us by Dr. Hodges on this rather rare and unusual disease, and to caution you to study this report and excellent thesis of his when it is printed, because I believe that you will find you have seen cases in the past that were treated and who died undiagnosed with certain throat infections. The only thing that I could emphasize in this report is this: Of the various articles that I have read dealing with this subject, the most thorough and the most accurate so far has been the one that Dr. Hodges presented today. I was very much impressed with the classification that he brought out, putting it under three types, and would like to caution you that most articles in the past have dealt entirely in this disease with a destruction of white cells. It is true there is no real destruction, as a rule, of red cells in this disease; but in the one known case that I have seen the patient had so many ulcerations in the mouth and throat, and especially in the vagina, that she was practically exsanguinated when she entered the hospital, from loss of blood. Whether you believe it or not, her hemoglobin at the time of admission was 10 per cent and her total red cells 500,000. The white cells were about 200. That was not a typical blood picture of this disease by any means; still, this woman had a typical clinical picture, and, to further justify that diagnosis, she died.

This shows, though, the possibility of your mistaking your diagnosis because of such a marked diminution in red cells. I would caution you to inquire carefully if the patient has not had a severe hemorrhage from some source. In that case, you would certainly have a very distorted picture.

I think the Association owes a debt of gratitude to Dr. Hodges for the time and work that he has put on this paper, in bringing it to our attention, because it is one of the newer things and because it is new there are certain elements of confusion. It is only by bringing together the proper correlation of various reports throughout the country, such as Dr. Hodges has made here today, that we can hope to get to a definite working point.

DR. H. V. THOMAS (Buckhannon): My attention was first called to this disease in 1926, at which time "angina" was attached to the name. The executive officer of the U. S. Naval Hospital at Brooklyn, where I was serving at the time, came down with this disease.

Practically the only clinical symptom which he exhibited during the course of the disease was weakness. Examination revealed nothing more than a red throat. Soreness was brought out only after questioning, as I recall. The laboratory picture was one of extreme loss of the leukocytes. The count was at 800, as far as could accurately be determined, and that fell even lower.

Without any clue as to the treatment at that time, the patient was put to bed and at rest. He stayed there for several weeks, got up, and had a remission. The white count rose and fell. After about three months he was sent on furlough, and the last I knew of him, he was up and about and apparently in fairly good health. During the remission period, while under observation, there was no complaint other than weakness.

I came in contact with two cases of this disease in the South, and both of them showed practically this same picture. At the time at which attention was called to it in New York, there was a good deal of stress laid upon streptococcic sore throat, to which Dr. Hodges has called attention. In those cases which I have seen, I have been impressed with the findings of the toxicity which points toward infection.

I wish to ask Dr. Hodges whether there is anything in the prognosis which may be offered in regard to the differentiation of the different classes which are being set forth.

DR. HODGES (*closing the discussion*): I have noted in the literature the same thing which Dr. Hoge has stressed—the fact that the author starts out by quoting from Schultz and saying the disease is one in which we get a reduction of the leukocytes, but in which the red cells stay about normal. Then they proceed to report their cases and report hemoglobin values around forty and fifty per cent and red cells around two million or three million, even though they have just made the statement that anemia is not a marked feature. So I think that most of them have simply copied Schultz.

The röntgen-ray therapy, which I think would be so important, I wanted to be discussed by Dr. Mackenzie, who is not present; so I will just give you briefly Friedmann's technique, as I remember it. He uses one-twentieth of a unit skin dose. I don't know what that is in our terminology, but that is what he gives, at a distance of fifty centimeters, a duration of two minutes, the first exposure being over the long bones of the lower extremities, followed the next day by radiation, two minutes, over the long bones of the upper extremities and over the throat.

I would like to ask Dr. Thomas if the other two cases recovered also.

DR. THOMAS: One case was treated by x-ray, which, at the time, they thought was specific. That was three years ago. I don't know what the follow-up was on it. I know one patient died. I am not informed on the other case.

DR. HODGES: One patient recovered and one died, and the outcome of the other case you don't know. The prognosis in general has been worse in cases where we have reductions of more than one type of blood element. In other words, if we have reduction in the polynuclears and in the red cells and in the blood platelets, we will have a worse prognosis than if only the agranulocytes alone were affected.

It is also to be noted that blood transfusions would seem to be of the greatest value when we have an involvement of the red cells as well as the agranulocytes.

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Potency of Arsphenamine

There is no official standard for therapeutic potency of arsphenamine preparations. According to reports of the United States Public Health Service Hygienic Laboratory, no one brand has been definitely established as superior to others when considered from the point of view of clinical efficiency. In some foreign countries, every preparation of arsphenamine and neoarsphenamine is tested on mice for therapeutic efficiency before being used. (*Jour. A. M. A.*, November 9, 1929.)

Spastic Constipation

Vegetables, fruits and cereals should make up the major part of a normal diet. They are valuable for their carbohydrates as well as for their vitamins and minerals. The cellulose they contain furnishes the bulk that is essential for the proper functioning of the intestinal tract.

This principle is exaggerated, however, in the present-day fad for roughage, says Dr. Russell S. Boles in an article on diet in a recent issue of *Hygeia*.

Bran was the forerunner of this fad. While bran has some food value, its indiscriminate use to stimulate intestinal movement is discouraged by Dr. Boles. He explains that much of the constipation seen today is of the spastic type, in which there exists irritability and spasm of the bowel. In such cases, too much roughage aggravates the irritability and therefore makes the constipation worse.

RECTAL NARCOSIS WITH AVERTIN *

By CREED C. GREER, M.D.
Clarksburg, W. Va.

Avertin was first synthesized by Willstaetter and Duisberg in 1926 and has since been used abroad and to some extent in this country, and with its rapid development bids fair to take its place with the other useful forms of anesthesia, namely, local and inhalation types.

Avertin, as now available and used in this country, is tribromethyl alcohol dissolved in a solution of amylene hydrate, one cubic centimeter of the fluid containing one gram of the drug (avertin or tribromethyl alcohol). It is a volatile liquid which easily dissolves in water, is inflammable, but is not expensive and is sensitive to air and light. It should be kept in a tightly stoppered, dark-glass container, and not in contact with an open flame.

It is readily absorbed by the intestinal mucosa following its injection, and the patient usually begins to feel drowsy and is frequently narcotized within three to five minutes after its instillation into the rectum.

The elimination is chiefly by the kidneys in combination with glycuronic acid. Straub found that 68% was eliminated in the first twenty-four hours and 81% in the first forty-eight hours in the urine.

Various preoperative methods have been used. The one given below is the one we have used in our small series of cases. The evening before operation, the patient is given a laxative or cleansing enema, and three hours before the administration of the avertin another cleansing enema is given; it being preferable, but not absolutely necessary, to allow a sufficient time between the enema and the administration of the anesthetic to insure a cleansed and empty colon. One-half hour before the anesthesia, morphine sulphate gr. 1/6, atropine sulphate gr. 1/150, and ephedrine sulphate gr. 3/8 are given hypodermatically, and at the time of administration of avertin the dose of ephedrine sulphate is repeated. In patients with hypertension, the ephedrine sulphate is omitted in preoperative preparation.

With avertin, as in other types of anesthetics, the "personal equation factor" is present and the dosage sufficient for one individual may not be that for another. The anesthetist must be influenced by the general physical make-up of the patient in calculating his dosage. Various dosages, ranging from 80 to 200 milligrams per kilogram (2.2 lbs.) of body weight, have been advocated; but the latter is too high for safety. We have used either 100 or 125 milligrams per kilogram of body weight in the cases cited in this paper. This amount is well within the range of safety. We have prepared a dosage table for the various weights, ranging from 25 to 225 pounds, with the corresponding amount of avertin and distilled water necessary for a three per cent solution for each weight. Such a table is more convenient and affords less likelihood of error than by calculating each individual dose at the time of preparation. The avertin fluid is readily soluble in water up to three per cent, and this is the strength that we have used.

The above calculated dosage is considered the amount necessary for basal surgical anesthesia and will suffice in a good percentage of the cases requiring any type of operation. In those cases in which the anesthesia is not sufficient, it has to be supplemented with either one of the inhalation forms or repeated fractional doses of avertin, usually one-fourth of the original dose.

The necessary equipment is a glass container of approximately 500 c.c. capacity with a well-fitting glass stopper, two graduates of 100 and 25 c.c., a centigrade thermometer (laboratory type), one medicine glass, a rectal tube or catheter, and a glass funnel.

In the preparation of the avertin solution there are several important details and precautions that must be observed. The preparation of the solution is begun fifteen or twenty minutes before the time of operation, and is prepared in the following manner: The flask containing the measured amount of distilled water for a three per cent solution is placed in a water bath or over an open flame and heated to 38 or 40 degrees Centigrade. It should never exceed 40° C., as dibromacetaldehyde and hydrobromic acid are formed and the former is very irritating to the rectal mucosa. The avertin is added to the distilled water, the flask stoppered and vigorously shaken until no oily globules are visible in the resulting solution. This requires only a small amount of shaking. Five centimeters of this solution are placed in the medicine glass or other receptacle, and two drops of a 1:1,000 aqueous solution of Congo red is added. An orange-red color is produced. If a blue or violet color appears, the solution should not be used, as it denotes decomposition of the tribromethyl alcohol with the resulting formation of hydrobromic acid and dibromacetaldehyde, the latter with its irritating effect upon the rectal

* Original paper.

mucosa. If the test excludes decomposition, the solution is ready to be instilled and should be administered before it has cooled appreciably below 38° C.

The patient is placed on the left side with the buttocks elevated upon two or three pillows. The lubricated rectal tube or catheter is inserted approximately six inches from the anal sphincter, and the funnel is then attached. The prepared solution, which is approximately at body temperature, is allowed to be slowly instilled by gravity. Occasionally some difficulty is encountered in introducing the solution in this manner, and, if this be the case, the solution may be injected with a large syringe. Frequently flexing the right lower extremity or having the patient take a few deep breaths greatly facilitates the introduction of the fluid. The tube is gradually withdrawn and a small pad is held in place by a strip of adhesive across the buttocks. The room should be darkened following the administration, and quiet maintained.

The patients frequently begin to be drowsy by the completion of administration of the avertin, and are usually asleep within three to five minutes after its introduction, and in fifteen minutes have reached the stage of narcosis and now may be taken to the operating room.

The anesthetist should be constantly with the patient from the time the avertin is administered until the completion of the operation. The blood-pressure, pulse and respiration should be recorded at frequent intervals and the condition of the patient continuously noted as in any form of general or regional anesthesia. A nurse should be in constant attendance until the patient has reacted.

Unconsciousness is quickly and quietly produced with no apprehension, stage of excitement, nor feeling of suffocation. The patient goes quietly to sleep with a feeling no different from that of normal sleep, and awakens without the unpleasantness of nausea and vomiting that is so very frequently the post-operative annoyance to the patient (and often the doctor) following inhalation anesthetics.

The indications for the use of avertin are practically any surgical procedures that require general anesthesia, as well as several medical conditions, such as controlling the convulsions of tetanus and of eclampsia.

The contraindications are as yet somewhat in dispute, but serious disease of the liver and kidneys and lesions of the rectum are generally accepted as positive contraindications.

We have used avertin in 25 surgical cases, and, while we realize that this number is far too small from which to draw any far-reaching conclusions, will venture to cite some of our observations noted. The operators were as follows:

Thyroidectomies 4, hysterectomies (one vaginal and three supravaginal) 4, herniotomies (bilateral) 2; post-gastroenterostomy 1, cholecystectomy 1, radical breast amputation 1, appendectomy 1, exploratory laparotomy (inoperable tumor) 1, prostatectomies (suprapubic) 1, D. and C. and perineorrhaphy 1, plastic operation of face 1, drainage of retroperitoneal abscess 1, amputation (mid-thigh) 1, reduction of fractures (tibia and fibula) 1, removal of pilonidal sinus 1, removal of thyroglossal cyst 1, removal of brachial cyst 1, oöphorectomy (bilateral cysts) 1; total 25.

Some of these cases were excellent operative risks, while others were only fair or poor.

Avertin alone was sufficient for complete surgical anesthesia in eleven cases, or 44%. Supplemental anesthesia was necessary for complete anesthesia in the rest. The oldest patient was 68 years of age, and the youngest was 20 years old. Ten of the patients were males and fifteen were females. The largest patient weighed 215 pounds and the smallest 75 pounds, and on the latter a thyroidectomy was performed for the relief of a toxic adenoma. The longest operation was performed upon a woman 30 years of age, who had extensive disfigurement of her face resulting from burns sustained in infancy. A plastic operation was done with skin grafting and required three hours and twenty minutes. The average time elapsed from the completion of the operation to complete reaction was two and one-half hours. The longest time required for reaction was seven hours and occurred with a patient 68 years of age who had hypotension and was cachetic. This patient received 125 milligrams of avertin per kilogram of body weight, and we now feel that this was probably an excessive amount in view of his poor circulation, degree of nutrition, and low blood-pressure. Secondary sleep usually lasted approximately four hours. There was no post-operative nausea or vomiting in any of these cases in which no supplemental anesthesia was used. In one case in which a thyroidectomy was performed the patient was not aware that she had been operated upon until six hours after operation. In those cases in which supplemental anesthesia was necessary, ether or nitrous oxide and oxygen were used and the latter was found preferable. In every instance a much smaller amount of the anesthetic was required

than if avertin had not been given. Frequently a 25% or 50% mixture of nitrous oxide was sufficient. All of the patients went quietly to sleep, except one, who asked if he might sing and then mumbled an incoherent tune for a few minutes.

The maximum fall in blood-pressure from the time of administration of avertin until complete reaction was 82 m.m. systolic and 37 m.m. diastolic, and the minimum fall in any of the cases was 10 m.m. systolic and 8 m.m. diastolic. The greatest fall in blood-pressure was noted in those patients having hypertension. A number of the patients received ephedrine or adrenalin during the operation to counteract their decrease in blood-pressure. Seven cases had a systolic blood-pressure above 150 m.m. There were no cases of cyanosis or other symptoms of respiratory embarrassment. The respiratory rate was increased in every case usually from 4 to 8 respirations per minute, and the greatest acceleration in pulse rate was 40 beats per minute, while the least increase in pulse rate was 8 beats.

There were no cases of rectal irritation or discomfort following the administration of the avertin solution, and no evidence of kidney irritation was discernible. No other post-operative complications, such as bronchitis, pneumonia or other respiratory tract involvement, occurred.

Without exception, all of the patients have been enthusiastic over their avertin anesthetic, and especially those who have previously had operations under inhalation anesthesia. We are very much pleased with this form of anesthesia, from the standpoint of both the patient and the surgeon.

THE IMPORTANCE OF PROCTOSCOPIC EXAMINATION IN EARLY DIAGNOSIS OF CARCINOMA OF THE RECTUM AND SIGMOID

By W. P. BLACK, M.D.
Charleston, W. Va.

Every patient coming to the physician complaining of rectal discomfort, bleeding, passage of mucus, or constipation, should have a proctoscopic examination, as that is the only means of detecting early carcinoma of the rectum.

Dr. Jones, of Boston, Mass., read a paper before the American Proctologic Society at Buffalo in June, 1930, in which he states that he had a number of seven-year cures where the cancer had been discovered early and complete removal of the growth, including rectum, was done. He feels that the early diagnosis of these cases will be the means of curing a greater percentage than has been in the past.

In a number of cases coming under my observation, where the patients had been operated on for hemorrhoids or other rectal ailments, well-defined carcinoma at the junction of the sigmoid and rectum were found on proctoscopic examination. It was there at the time of the operation, and was really causing the symptoms of which the patient complained. This condition should not exist, and if the physicians had proctoscoped these patients they would not have made this mistake.

Practically all of the patients coming to me with carcinoma of rectum sigmoid are inoperable, due either to being advised by some person that they had piles, and giving suppositories, or thinking themselves that it was a case of piles, and using all the patent medicines on the market before consulting a physician.

Carcinoma of the rectum is a fatal disease unless discovered early and the entire rectum, including glands, is removed. When this is done you can expect a great relief to your patient and a few cures in the very early cases. This is the only hope for the patient, and certainly should not be overlooked by the physician who knows what it means.

Pneumococcus Vaccines

The Council on Pharmacy and Chemistry reports that increasing experience has failed to demonstrate the value of pneumococcus vaccine in the treatment of pneumonia, and the prophylactic value of the vaccine has not been conclusively proved. The Council came to the conclusion that the experience with this vaccine has not afforded acceptable evidence for its therapeutic usefulness and voted to omit it, with the accepted brands, from New and Non-Official Remedies. In accordance with this action, the Council announces the omission of Puenmococcus Vaccine Immunizing (Gilliland Laboratories, Inc.); Pneumococcus Vaccine (Lederle Antitoxin Laboratories); Pneumococcus Vaccine, Prophylactic (Eli Lilly & Co.); Pneumococcus Antigen-Lilly; Pneumococcus Vaccine (National Drug Company); Pneumococcus Vaccine (Four Types) (Parke, Davis & Co.); Pneumococcus Immunogen (Parke, Davis & Co.); Pneumococcus Vaccine (E. R. Squibb & Sons). (*Jour. A. M. A.*, March 8, 1930.

DIAGNOSIS AND MANAGEMENT OF LATERAL SINUS THROMBOSIS *

By E. C. HARTMAN, M.D.
Parkersburg, W. Va.

A very brief anatomical description of the dural sinuses at this time will not be amiss, as it plays a very important part in the causation of the disease. The varying anatomic structure of the temporal bone, and the relative position of the sinus with reference to the adjacent mastoid cells, is thought by some to play as important a part in the incidence of the infection as the virulence of the organisms.

The venous sinuses of the skull are divided, for ease of description, into single sinuses and paired sinuses. The single sinuses are, namely, superior and inferior longitudinal, circular, occipital, and marginal. The paired sinuses are the laterals, sigmoids, cavernous—superior and inferior petrosals.

They form a series of channels of various sizes occupying clefts in the substance of the dura. They receive the cerebral, meningeal and diploic veins, and communicate with extracranial veins by numerous emissary veins, the most important ones being the mastoid, ophthalmic, anterior and posterior condyloid, and the occipital. They are drained by the internal jugular. The bulk of the blood from the anterior and lower portion of the skull and part of the face empties into the cavernous sinuses; the remaining portion, including the greater part of the cerebrum, pons, cerebellum, and peduncles, empties into the tributaries of the lateral sinus.

It has been shown that the superior longitudinal sinus passes into the right lateral sinus, and the straight sinus into the left lateral sinus, in about fifty per cent of cases. Occasionally there is a small communication in the region of the torculla herophili. In thirty per cent of cases the longitudinal and straight sinuses bifurcate, one branch of each passing to the lateral sinuses. In the remaining twenty per cent the sinuses are fused at the torcula. The dural sinuses do not contain valves, but do contain trabeculæ, the latter being more numerous in the cavernous sinus.

Lateral sinus thrombo-phlebitis occurs in about five per cent of all cases of mastoiditis. It is characterized by an inflammation of the wall of the sinus and the formation of a clot, the infection originating from an adjacent area in the mastoid or middle ear. The process is more or less localized, partly or wholly obstructive, and of varying degrees of sepsis, according to the kind and virulence of the causative organism.

The streptococcus is the principal invading organism; it may be hemolytic or non-hemolytic; it may be associated with others as the pneumococcus, staphylococcus, or *Bacillus mucosus capsulatus.*

When the sinus is completely closed by the thrombus, extension in either direction may take place, backward toward the torculum or downward through the jugular bulb and internal jugular to the subclavian vein. It may spread to the cavernous sinus via the superior petrosal.

Disintegration of the clot due to the invading microörganisms, with the formation of pus in the sinus, is a common occurrence, and the usual train of symptoms of a septicopyemia ensues. Infectious emboli escape and are carried to the heart, lungs, liver, kidneys, and other organs of the body, with the consequent establishment of new foci of infection, septic pneumonia being one of the most common complications.

The primary infection, as stated above, usually is from a direct invasion of the sinus from the mastoid cells or extension of an infection from an emissary vein, but is found to occur from middle-ear suppurations without a mastoid involvement, the infection taking place through the floor of the tympanum into the jugular bulb. Also, there are cases reported due to remote infections from the lungs, heart, kidneys, etc.

One of the most important things in the diagnosis of sinus thrombosis, as in all other diseases, is a careful, painstaking history of the case from the beginning of the first signs of onset; the time and duration of the earache or infection; whether acute, chronic, or an acute exacerbation of a chronic suppurative otitis media; whether there has been a mastoidectomy performed; what kind and how long; whether the present trouble followed an infectious disease (measles, scarlet fever, influenza, pneumonia), and other common causative factors.

The history of an earache without a discharge or cessation of a previously discharging ear, with chills and fever, may be very important.

Symptoms and Diagnosis.—General: The classical picture of lateral sinus thrombosis is not present in the early stages of the disease; *e.g.*, the stage of sterility of the existing thrombus. The patient does not look sick, and is apt to present an appearance of wellbeing, although running a very high tempera-

* Read before the Eye, Ear, Nose and Throat Section of the West Virginia State Medical Association at White Sulphur Springs on May 21 1930.

ture; his senses are clear; there is no delirium or confusion such as is seen in meningitis.

Chilly sensations or a distinct chill followed by a sudden rise in temperature, often reaching 106°, receding to almost normal, attended by the usual profuse perspiration, are the most constant symptoms present.

"Skyrocket-like temperature curve" was the fitting term used by an otologist in our base hospital.

Headache, general or localized, over the sinus affected, is also fairly constant and is more pronounced at the height of the temperature elevation.

Abdominal symptoms, nausea, vomiting, and diarrhea are seen at times, and a diagnosis of typhoid fever is frequently made until ruled out later by a negative Widal.

Pulmonary symptoms are frequently seen later, caused by infected emboli and infarcts. Cough, dyspnea, and pleuritic pains are common. Arthritic involvement and secondary anemia are also seen in the late stages.

Local symptoms: Post-auricular tenderness and swelling over the area drained by the mastoid veins, symptoms of venous stasis, tenderness and swelling in the upper cervical region are frequent.

Papilledema and venous engorgement is frequently seen to a mild degree, but can not be depended upon. This sign is of importance only when other causes of intracranial pressure are eliminated.

The Crow-Beck sign—dilatation of the retinal veins on pressure of the unaffected jugular—is not reliable and could be dangerous.

Diagnostic Aids.—Blood picture: The average leukocytosis is reported by many authors as between 16,000 and 20,000, with about 70 to 90 per cent polymorphonuclears. Burchell, of the New York Eye and Ear Hospital, states that the average is more likely between 5,000 and 15,000; but, of course, much higher counts are frequently seen, according to the stage of the disease and the infecting organism. It is a matter of fact that in the early stages of the disease blood findings are confusing and frequently lacking in characteristics; the same may be said about blood cultures. In about 25 to 35 per cent of cases a bacteremia can be found. The principal objection to a blood culture is the time required—forty-eight hours of valuable time, which means much to the patient.

The Tobey-Ayer test is a valuable aid in the early stages of sinus obstruction before venous compensation has been fully established. The test is as follows: With the patient in a lateral position, lumbar puncture is performed and the spinal fluid allowed to flow into a glass manometer of 2 mm. bore. The initial pressure reading is noted, also the presence of pulse and respiratory oscillations as evidence of patency of the monometric system.

Now, without in any way disturbing the patient, an assistant gently presses on one side of the neck, between the larynx and the sternomastoid muscle, until he feels a strong carotid pulsation. During the compression the operator watches the rapidity of the rise of the fluid column in the manometer, the promptness of the beginning and the full height to which it attains, and, on release of jugular compression, the rapidity of drop in pressure.

The procedure is now repeated on the opposite side of the neck, and then, for comparison, both sides are pressed simultaneously. In a typical case of lateral sinus thrombosis, there is a prompt and rapid rise in the fluid pressure to twice or three times the initial reading when the internal jugular vein draining the normal sinus is compressed. The pressure rise is maximal, being equivalent to the pressure attained when both veins are compressed.

Pressure over the affected side causes a very slow or no rise from 10 to 20 mm. These findings are characteristic of complete obstruction of the sinus. Partial obstruction from mural thrombosis naturally gives less striking results, yet is of value when correlated with the clinical findings.

An examination of the spinal fluid is important in the differential diagnosis from meningeal infections, and a Tobey can be easily done at the same time. X-ray examination, of course, is almost indispensable, for in the presence of the characteristic temperature rise and positive x-ray findings for mastoid infection one can not wait patiently for the development of the remainder of so-called typical symptoms and signs. Post-auricular swelling over the mastoid vein may or may not be present, and the same may be said about tenderness and swelling in the upper cervical region and changes in the retinal circulation.

A blood count can not always be depended upon, and forty-eight hours is required for a culture. In such circumstances there is only one course to pursue: *i.e.*, open the mastoid, uncover the sinus and inspect it.

Where operation is withheld through indecision until three or four days following the formation of a septic thrombus, post-operative recovery, if it takes place at all, is usually attended by a marked secondary anemia and many other complications incident

to the bacteremia. The fact of there being an intracranial infection or disease of otitic origin and character is a sufficient indication for an immediate operation.

Local signs suggestive of sinus involvement on exposure of the lateral sinus are evidences of perisinus abscess, granulations, and inflammatory exudate on the sinus walls, with accompanying clinical symptoms. A thrombosed mastoid emissary may be found at operation and is very suggestive of obstruction; discoloration of the sinus and loss of elasticity with necrotic spots are frequently seen. Aspiration of the sinus or incision with a scalpel or paracentesis knife will disclose the condition within the vein.

The average mortality rate is given at about forty per cent. Death is due generally to meningitis, brain abscess, septic pneumonia, or other complications seen in a bacteremia.

Treatment.—Briefly, opinions vary as to whether a jugular ligation should be performed in every case. With a positive diagnosis made, a ligation above the common facial is indicated, with or without a resection below the facial, according to the severity of the infection and the condition of the wall of the sinus.

Simple mastoidectomy exposure and establishment of drainage of the lateral sinus, removal of thrombus by light suction, and production of free bleeding.

Where there is evidence of pus in the trap of the jugular, McCarthy has had great success with retrograde irrigation of the internal jugular with Dakin's solution used at sufficient intervals to insure a clean sinus.

Blood transfusions are valuable adjuncts to the treatment, given at three- to five-day intervals, 150 to 500 c.c. of whole blood, if possible.

SUMMARY

1. Careful, complete history of the case and close study of clinical symptoms, with special attention given to temperature curve.

2. Early diagnosis by all available means at our command—a complete, thorough physical examination, x-ray, blood counts and cultures, urinalysis, spinal puncture, fundus examination, and Tobey-Ayer test.

3. Immediate operation and reoperation, if necessary; thorough exposure of affected sinus, ligation and resection, if indicated.

4. Frequent transfusions of whole blood as often as required, and active coöperation with capable medical counsel in the matter.

5. Where definite clinical symptoms are present, waste no time with blood tests and cultures. "It is better to be safe than sorry."

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Antiustio Not Acceptable

The Council on Pharmacy and Chemistry reports that Antiustio is claimed by the manufacturer, Frederick Laboratory, Toledo, Ohio, to be "The Greatest Burn Remedy in Existence." A circular contains the following indefinite and non-quantitative statement of composition: "FORMULA Solvent Solution of Plumbic MATERIALS Subnitrate of Bismuth Zinc Sulphate and Iodide of Lead combined with mineral waxes." From this and other statements it would appear that Antiustio is a petrolatum-paraffin mixture claimed to contain 5 per cent of bismuth subnitrate along with small but undeclared amounts of zinc sulphate and lead iodide. The Council found Antiustio unacceptable for New and Non-Official Remedies because it is an unscientific preparation marketed with an inadequate statement of composition, under a name which is not descriptive of its composition and with claims that are exaggerated and unwarranted. (*Jour. A. M. A.*, November 16, 1929.)

Action of Phenolphthalein

One should always think of the possibility of a phenolphthalein eruption when studying the etiology of a puzzling exanthem. As phenolphthalein is chiefly excreted into the intestine by means of the bile, and reabsorbed from the colon, there is a tendency for its action to continue for several days. Hence, its continued daily use may lead to ultimate overaction, with diarrhea, abdominal pains, tenesmus, and bleeding. (*Jour. A. M. A.*, April 12, 1930.)

DIVERTICULITIS OF THE COLON, WITH SPECIAL REFERENCE TO ACUTE PERFORATIONS OF THE SIGMOID *

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Although within the past decade there has been much discussion and a vast accumulation of literature on diverticulitis of the colon, yet, owing to the frequency with which the disease occurs and the serious consequences resulting therefrom, it is obvious that its further consideration might not be amiss before the group here assembled.

It is of interest to the surgeon because of the frequency with which the lesion may be confused with other puzzling inflammatory abdominal conditions; to the internist because of the many vague and obscure abdominal complaints from which it must be differentiated, and because of the response of mildly acute and subacute attacks to medical intervention; to the röntgenologist because it is to him that we look for a definite diagnosis. While it may not always be possible for him to make a conclusive diagnosis, yet with the aid of a competent x-ray study we are often able to arrive at a fairly satisfactory solution of what may have been an obscure clinical problem.

It is to the genius of the late Russell Carman, of The Mayo Clinic, that the profession is indebted for the pioneer röntgenological work in the study of diverticulitis. In 1914 he reported the first series of three cases examined with the röntgen ray. He was the first to evolve an outline of a workable plan of röntgenological study for the recognition and diagnosis of diverticula occurring in the colon.

Diverticula are found in any part of the alimentary tract from the esophagus to the rectum, inclusive. It is in the large intestine that diverticula are most frequently found. Here they occur both in solitary and multiple fashion, with an overwhelming election for the sigmoid flexure. The other portions of the colon may likewise be the site of diverticula, either alone or coexistent with sigmoid diverticula. The more extensive and numerous these diverticula, the sooner we may expect symptoms. It is with diverticulitis of the colon, especially of the sigmoid, that we are concerned in this discussion.

Diverticula may be true or acquired. In the true, all of the layers of the intestinal wall are included; for example, Meckel's diverticulum. In the acquired there is a protrusion or herniation of the mucosa through the thinned-out, weakened muscular layer, leaving only the mucosa, sub-mucosa and peritoneum forming the diverticula, and in the presence of the infected diverticula an adhesive, plastic peritonitis is often observed. They are found in any part of the circumference of the bowel wall, usually laterally between the mesentery attachment and lateral longitudinal muscular band.

It was in 1898 that Graser recognized and demonstrated the presence of diverticula of the colon. Coexistent with the inflammatory or infective process the clinical entity of the disease was established. Almost another decade passed before any further progress was made. In 1904 Beer came out with the first complete article on this condition. Mayo, Wilson, and Giffin, in 1907, reported a series of five cases operated, presenting in detail the results of their studies to the profession. Since this time there has accumulated an increasing and extensive literature on diverticulitis. Excellent articles reviewing the literature and reporting additional cases have in recent years been published by McGrath, Mayo, Judd, Carman, Giffin, Erdmann, Lockhart-Mummery, and others.

Diverticula, as previously stated, may be single or multiple, and vary in size from a pea to a walnut, round or asymmetrical in shape, sessile or pedunculated, either communicating with the lumen of the bowel through an opening as large as the diverticulum, or the opening may be narrow and constricted. It is not unusual to find diverticula containing fecaliths of such density as to resemble foreign bodies. Diverticulosis, or the non-inflammatory or symptomless diverticulum, is found in any part of the colon, the sigmoid being the site of election. In the colon proper, the contents are of a fluid character. In the sigmoid the contents are of a more solid or semi-solid nature, resulting in a tendency to form concretions and more gaseous distention, which is probably the explanation of the development of the disease more frequently in the sigmoid region than in other parts of the colon. So long as the diverticula, irrespective of their location, remain free from infection, they are symptomless and therefore harmless, but always potentially harmful. The parallel between diverticulosis and the normal appendix is striking. So long as they remain free from infection, their presence is of little consequence; but let either of them become infected and then there is a different picture to deal with.

* Read before the Surgical Section of the West Virginia State Medical Association at White Sulphur Springs on May 21, 1930.

Diverticulitis is a disease rather peculiar to middle life, but one can safely say there is relatively no age limit. The youngest case on record was reported by Erdmann—six years. Ashworth reports one at seven years. At post-mortem the disease has been found in the very aged. It is more prevalent in the fourth and fifth decades of life. It is two to one more frequent in the male than in the female, and is found in well-nourished subjects, many inclined to obesity. However, it must not be understood as not occurring in the thinner individual.

The etiology of the condition has been widely discussed, but, as a matter of fact, its true causation does not seem to be fully understood. Constipation, associated with increasing intraintestinal pressure, straining at stool, is believed to have some bearing on the development of the disease. No single factor furnishes a sufficient explanation of the development of an acquired diverticulum. There are those who argue that congenital weakness plays an important rôle. Lauber, in reporting a series of cases, rather supported the predisposition theory. He reports having found the same clinical picture of intestinal disorders in eight members of the same family. The diagnosis was confirmed by x-ray study in three. The remaining five were recorded as presenting the same general symptomatology as the three in which the diagnosis was proved by x-ray examination. The author was probably justified in concluding that all the members of this family were the victims of the same disease. Inasmuch as women are more constipated than men, and diverticulitis is two to one more frequent in men than in women, what is to become of the constipation theory? It would seem that constipation could logically be accepted as a causative factor only in the presence of an inherent or congenital weakness of the bowel wall. The normal structure of the large bowel, with its arrangement of longitudinal muscular bands, multiple sacculation with the deposit of subserous fat, Masson believes must be recognized as a logical cause for the presence of any preëxisting weakness in this region of the colon.

The symptom complex of diverticulitis is in many ways strikingly similar to the clinical picture observed in appendicitis. Diverticulitis has frequently been referred to as a left-sided appendicitis. In both diseases the clinical pictures of chronic, subacute or acute conditions all occur with striking similarity, with the exception that in diverticulitis the inconstancy of its location is strikingly different. The clinical course, however, is similar.

Acute diverticulitis may be ushered in with pain in the region of the umbilicus, spreading to the pelvis or the left abdomen. There may be nausea and vomiting, variable temperature and pulse range, and leukocytosis. The physical findings are those of the acute abdomen. Resolution may occur, the attack passing off, as often happens in the acute appendix. The infection may be progressive, resulting in abscess formation, perforation, peritonitis, rupture into some hollow organ such as the intestines or bladder, or become walled off and sealed to the abdominal wall, ultimately pointing on the outside. Probably the most frequent termination of the fulminating type of diverticulitis or, as Wilson terms it, peridiverticulitis, is that it may either be walled off by plastic adhesions or rupture into the peritoneal cavity, with a resulting peritonitis that not infrequently terminates fatally.

In chronic diverticulitis we have again a striking analogy to the symptoms observed in a grumbling or subacute appendix: periodical attacks of digestive disturbance, a sense of abdominal uneasiness or actual discomfort, graduating into pain of varying degrees of severity, usually referred to the site of the infected diverticula on the left side; localized soreness and tenderness in the region of the diverticulitis, rigidity of the muscles, rebound pain, diminished peristalsis according to the extent of the peritonitis, and frequently a mass can be felt. It is to be remembered that at first only one diverticulum may be infected, but the infection may be followed by an extension of the inflammation to one or many, according to their number in that immediate part of the colon.

As in all chronic inflammatory diseases, there are periods of subacute exacerbations, and, finally, as a result of this low-grade infection, inflammatory products are deposited in the wall of the colon and adjacent to the colon which produce localized thickening of the colon wall, contractions, and the formation of a fibrous mass in which may be found fecal matter with multiple abscesses. The same inflammatory process, while slow, may progressively extend, involving other diverticula in a similar manner. This picture of the gross pathology may be several years in developing into maturity. The ultimate termination of such an inflammatory process will be the development of deformities, angulations, tumor formation, and, finally, varying degrees of obstruction, depending upon the extent of the encroachment upon the lumen of the bowel. If the mucous membrane does not become ulcerated, no blood will be noted in the stools. The finding of

blood in the stool of benign diverticulitis does occur, but with far less frequency than is true in carcinoma of the colon. In the matter of differential diagnosis, the finding of blood in the stool would not justify the exclusion of the presence of a diverticulitis, yet would lead the examiner to lean strongly towards carcinoma. A differential diagnosis of diverticulitis and carcinoma of the colon will always be a diagnostic problem, for there are today no definite methods known by which these two diseases can be positively differentiated. Careful evaluation of the symptoms of the two conditions with competent x-ray study are our main dependencies in arriving at a reasonably correct diagnosis. Even after a most painstaking study, with all the special examinations at hand, the abdomen opened, with the tumor mass in the surgeon's hand, he may then mistake the true nature of the disease. Not until the mass has been resected and the pathologist has given us his report can we know positively the correct answer.

In reviewing the literature on diverticulitis of the colon, we are impressed with the large number of diverticuloses being diagnosed in the studies conducted in the larger clinics. Records of The Mayo Clinic show that, in the period from 1924 to 1928, inclusive, 26,699 routine x-ray examinations of the colon were made for general diagnostic purposes, and in 1,574 of these (5.89%) diverticula were found. Only sixteen of these patients were under forty years of age; 64% were men, 36% women. Records of the clinics further show that out of 1,574 recorded cases of diverticulosis, positive diverticulitis was present in about one-third. Spriggs, of London, in one thousand consecutive cases of x-ray study of the colon in individuals who had come to him on account of some abdominal complaint, found about 10% of them with some phase of diverticulosis. In view of these statistics, it is clearly important to avail ourselves of all modern diagnostic methods that might prove of help in discovering the presence of a diverticulosis of the colon before it develops into the stage of surgical diverticulitis.

Judd, Spriggs, Enfield, and others are of the opinion that the development of surgical diverticulitis can in many cases be prevented by the institution of appropriate medical treatment directed towards the elimination of fecal stasis and foci of infection. Careful clinical study and competent x-ray examination will do much towards the establishment of an early diagnosis of diverticulitis, obviously giving the internist the opportunity to start treatment, the objective of which should be the removal of foci of infection, relief of constipation, diet regulation endeavoring to reduce the amount of fecal residue, rendering the stools of semi-solid or fluid consistency. Colonic irrigations are doubtless helpful in ridding the colon of retained indigestible, irritating matter, lessening the tendency toward the development of fecal concretions, minimizing the tendency toward the development of the spastic colon.

In outlining the management of surgical diverticulitis, the type of pathology for convenience can be placed in three groups: First, the acute inflammatory, including those cases with symptoms of abscess formation, perforation, peritonitis, local or general, all of which present much the same surgical problem as acute appendicitis or some other acute intra-abdominal lesion. Second, those in which are found evidences of varying degrees of obstruction as a result of tumor formation and angulation of the colon. Third, the group in which are found different complications following in the wake of an acute diverticulitis, the most frequent of which are colo-vesical, colo-intestinal, and colo-abdominal fistulæ.

In the acute inflammatory group the emergency must be handled according to the pathology found, admitting but little choice as to the surgical procedure, abscesses drained, perforations closed when feasible, peritonitis managed according to the individual case, and, finally, establishment of adequate drainage. It is in the chronic and subacute cases in which there are tumor formations and various deformities resulting from long inflammatory involvement that a choice of operative procedure is offered. Radical resection of the involved area of the colon is seldom justifiable and should be undertaken only when the diseased area is readily accessible and free from adhesions to adjacent structures. There are cases occasionally occurring in which a short-circuiting operation will be feasible; for instance, in a diverticulitis of the cecum the distal ileum may be anastomosed to the transverse colon. In diverticulitis of the sigmoid the location of the diseased area may often be such as to make the short-circuiting operation impracticable and often impossible. All things considered, it would seem that simple colostomy is the operation of choice. It serves to relieve the urgent obstructive symptoms, giving the infective area a chance to subside, and can be done with but little risk. The inflammatory involvement, having been put at rest, may subside so completely that the colostomy, if it fails to close spontaneously, can be closed later when conditions are favorable for the second-stage operation.

The association of cancer with diverticulitis has been demonstrated as a possible occurrence. In deciding on the type of operation to be undertaken, it is highly important to determine, as far as possible, the presence or absence of malignancy. The leaving, through error in diagnosis, of a resectable malignant tumor *in situ* is obviously a surgical tragedy.

Undoubtedly, every practitioner of wide experience can look back and recall instances of patients complaining of some obscure abdominal condition who were doubtless suffering from diverticulitis. Many years ago, in my early medical experience, I recall having seen, with a colleague, a case of unrecognized diverticulitis. As I remember the circumstances, the patient was a middle-aged male who was admitted to the hospital with the symptoms of an acute appendix. The case was so diagnosed and promptly operated. The appendix was innocent in appearance and apparently was playing no part in the man's illness. On further investigation the cecum was found to be extensively indurated, thickened, with definite inflammatory tumor formation. The diagnosis of malignancy was made. A short-circuiting operation was done, anastomosing the distal ileum with the transverse colon. Within a few weeks the man was again operated upon, with the expectation of resecting the cecum previously diagnosed as malignant. Much to the surgeon's surprise, the mass noted at the first operation had practically subsided. This was an excellent demonstration of the extent to which an inflammatory benign diverticulitis will subside if the involved area is put at rest.

We have had a personal experience with a number of cases of chronic diverticulitis of the colon, diagnosis confirmed by x-ray examination. However, no further reference will be made to this particular type of diverticulitis, in that it is our purpose to refer only to acute perforative diverticulitis of the sigmoid.

Five cases classified as acute surgical diverticulitis have come under our observation. In one the diagnosis was confirmed by x-ray study. The remaining four were diagnosed on the operating table after the abdomen had been opened. The later phases of acute surgical diverticulitis offer unusual diagnostic difficulties. Many of these cases, as was true in our experience, come in with an advanced peritonitis, the primary cause undetermined, the emergency admitting of no delay for adequate study, and x-ray examination, even if done under such adverse conditions, probably would not be dependable. Three of our five cases came into the hospital with a peritonitis so far advanced that the actual underlying cause could not be determined. In one a diagnosis of acute appendicitis was made. The patient, a middle-aged, obese woman with a characteristic history of acute appendicitis, was acutely ill on admission; leukocytosis of 20,000—a poor surgical risk. At operation the appendix was found to be acutely inflamed, bound down in the retrocecal position, removed with some difficulty. An inflammatory mass, the size of an egg, infiltrated and thickened by the inflammatory exudate, protected by a plastic peritoneal involvement, was located on the antero-lateral wall of the cecum. There was no evidence of perforation of the diverticulum. It was not disturbed. The recovery of the patient was uneventful. Microscopical study of the appendix suggested to us the probability that the acute diverticulitis found was the primary lesion.

In three the operative findings were as follows: Free pus in the peritoneal cavity, colon odor, an extensive infiltrated inflammatory mass found in the pelvic portion of the sigmoid. No perforations were demonstrated. In two a general peritonitis was noted. In one the peritoneal involvement was limited to the pelvic region. Adequate drainage was established. One recovered, developed a fecal fistula that closed within a few weeks. Two died within the forty-eight-hour period with general peritonitis.

Our fifth case of surgical diverticulitis I am reporting in detail; first, because she was the only one of the surgical series in which an opportunity for clinical observation and adequate röntgenological study was offered; second, because of the unusual x-ray findings; third, as demonstrating some of the diagnostic difficulties encountered in the study of acute abdominal diseases.

Female; age fifty years. Previous history unimportant. In March, 1926, this patient suffered from an unusually severe attack of influenza, complicated by phlebitis of the left leg. In the latter part of April a change of climate was advised. She was sent to Asheville, and for a time seemed to improve in a general way. Shortly before leaving Roanoke for Asheville, there developed soreness and a dull ache in the left abdomen, particularly marked in the left flank and left lower quadrant. Patient states she was more or less constantly changing her position in an effort to find a more comfortable position, but without much success. In June she was taken acutely ill with an obscure abdominal condition (called by

the physician in charge "abdominal flu"). From the history obtained, the main points of interest were as follows: Moderately severe febrile pulse, generalized abdominal pain and soreness, distention, constipation, pain and soreness more marked over the left abdomen. She remained in Asheville three weeks, the condition growing progressively worse, at the end of which time she was brought to Roanoke.

The following day, July 1, 1926, when admitted to the hospital, she presented the picture of a gravely ill patient, profoundly septic; temperature 102°; pulse 130, of poor quality; blood-pressure 90/60; leukocytes 18,000; neutrophiles 85%; red blood cells 3,000,000; hemoglobin 60%. Pus, albumin, and granular casts—the usual renal findings in suppurative abdominal conditions—were present in the urine. The abdomen was distended, generalized tenderness and soreness were noted, more marked in the left abdomen, particularly in the left lower quadrant, anterior kidney region, and over the crest of the ilium; rebound pain; muscular rigidity; swelling over and laterally to the left of the crest of the ilium. At the latter point the skin was glazed in appearance and tense; crepitation was noted. Aspirating needle was used, swelling punctured, and air, colon odor, was withdrawn, no flud being obtained.

The physical findings observed were typical of an acute abdomen, the source of infection, however, being obscure. Pelvic examination was negative. X-rays of the dorsal and lumbar vertebræ, pelvis, sacro-iliac and hip joints were negative for involvement of bones or joints. A few small areas of tuberculous mottling were noted in the right lung, and, over the left iliac crest, shadows having the appearance of air bubbles were observed. Barium enema studies were then made of the rectum and colon. The findings were of such character as to lead us to a positive conclusion that we were dealing with a perforation in the retroperitoneal space of the colon, allowing gases to escape from the bowel and to burrow partially around the splenic flexure and descending colon and then laterally and posteriorly along to and over the crest of the ilium. Localization of the area of abdominal infection was made over the anterior kidney region. Bearing in mind the importance of establishing drainage without accidental invasion of the peritoneal cavity, the incision was carried from the most prominent part of the swelling, lying on the outer aspect of the iliac crest, vertically upward to the free border of the ribs, carefully dividing the muscles of the abdominal wall and opening into a large abscess cavity lying in the left kidney region. The abscess cavity was explored with the finger and was found to have burrowed up along the inner and over to the outer surface of the crest of the ilium. Drainage was established and the abscess cavity packed, the wound being left wide open. A direct transfusion of 500 c.c. of whole blood was given immediately by the syringe method. The transfusion was repeated the third day and again on the sixth day.

Her convalescence, while stormy at first and slow, was ultimately satisfactory. She was dismissed from the hospital ten weeks later. Her recovery and return to normal health have been excellent.

There persisted a fecal fistula, the external opening being located at the site of the original swelling, previously mentioned, over the outer aspect of the crest of the ilium. The course of this sinus was outlined by the injection of lipiodol and its location demonstrated by the x-ray film. The sinus closed spontaneously in eighteen months. Recently this case was checked with an x-ray study and the appearance of the colon was normal. Her health is excellent at this time.

Discussion

DR. JOHN E. CANNADAY (Charleston): This condition, as Dr. Whitman pointed out, is considerably more common than is ordinarily supposed. The clinical picture of it, in my observation, is not unlike a left-sided appendicitis. Dr. Charles Mayo, in his comments on it, states that it is incidental to age and fat, and he humorously describes it as being due to a diet of potatoes; that is, too much carbohydrate. As has been said, it is ordinarily treated conservatively. The patient usually comes around all right if we wait, use simple, harmless remedies such as small enemas, and do not get too excited about it. An occasional case should have a resection; there is no question about that. That is, a preliminary colostomy with resection of the large bowel later, or, at times, preliminary colostomy followed by a short-circuiting operation, using the Rankin clamps. This last is a pretty clean procedure, as there is no actual contamination with this technique.

A competent x-ray man can do as much as any one else, or more, to help with the diagnosis of diverticulitis—certainly in chronic cases.

Dr. Whitman spoke of diverticulum of the duodenum. Not so long ago I had a case of diverticulum of the stomach in which the diverticulum had extended up into the liver. The condition was found by x-ray and confirmed by operation. As has been

said, a few years ago many of these cases were called malignancies, abscesses, etc. Many of these cases do go on to perforation and the development of an abscess mass in the left side of the lower abdomen. If these cases are incorrectly drained, some of them will develop peritonitis and die.

In the treatment of intraperitoneal abscesses, I have been carrying a series of drains down to the abscess wall, after the method suggested and practiced by Dr. J. Rilus Eastman of Indianapolis. These drains are carried down to the abscess wall and no attempt is made to evacuate the abscess at the time. Usually, within a week or ten days, the pus will be led out alongside the drain by the principles of chemotaxis and foreign-body irritation.

DR. A. P. BUTT (Elkins): While listening to Dr. Whitman's paper I have been wondering if I did not have a case of this sort a few days ago.

A child of four was brought to the hospital with a history of having been seriously ill for five days. Upon opening the abdomen, three round worms were found in the abdominal cavity. There was a perforation in what was thought to be the base of the appendix; the appendix was not clearly seen. The child's condition was so desperate that it was deemed inadvisable to do anything other than to hastily close the abdomen and remove the worms.

DR. R. J. WILKINSON (Huntington): Dr. Whitman's paper emphasizes two rather important points: The first is conservatism in handling these cases, and, second, the necessity of having a competent x-ray man do the work when dealing with abdominal conditions.

DR. WADE H. ST. CLAIR (Bluefield): In 1916 I read before this association a paper on "Acute Acquired Diverticulitis." Diverticulitis, at that time, was a comparatively non-recognized surgical disease. Dr. Whitman mentioned, I believe, that in 1907 the Mayos reported five cases. In 1910 Dr. Cullen had accumulated the reported cases up to that time, which amounted to only 105 cases. Of course, we had diverticulitis before that, but it was just beginning to be recognized.

At the time that I read this paper I reported four cases. Since then I have been very much interested and looking forward to having the subject brought up to date in such a thorough way as Dr. Whitman has just presented it. There has been some improvement in the treatment of these cases by handling them conservatively. These cases were nearly all diagnosed as acute abdominal conditions, and at operation they were then diagnosed as malignancy. At least, that was my experience.

The case he referred to was a man past middle life who came in with very acute pain and all the symptoms of acute appendicitis. On opening the abdomen it was found that the appendix was not involved, but he had a tumor about the size of an orange, involving the cecum. At that time I thought I was dealing with malignancy and did an anastomosis between the ileum and the transverse colon, and about two weeks later went in again, finding the tumor only about one-third as large as it was originally. However, we all know that malignant tumors will subside by rest. I resected the ileum terminal, cecum, ascending and transverse colon, to within about two inches of the point of previous anastomosis. The pathological report was "diverticulitis." I do not know that I had seen a case before.

The second case was another "acute appendix"—very acute—which proved to be a diverticulitis of the colon, rather low down. I, unfortunately, did a resection. Now I should probably do a colostomy and drainage. This patient lived three weeks and died of some unknown cause.

There has been, to my mind, an advance in the diagnosis and treatment. When the abdomen is opened in the presence of an acute condition, temperature, etc., and a mass is encountered in the large bowel, it in all probability is a diverticulitis instead of malignancy. The treatment should be along conservative lines. We do not know the cause of diverticulitis, but I believe there is an analogy between it and the ordinary fistula *in ano*. Diverticulitis occurs more frequently in the lower colon than it does in any other part of the colon, and fistula *in ano* is probably a diverticulitis occurring below the attachment of the peritoneum giving rise to an ischio-rectal abscess pointing on the skin. When it occurs higher up on the bowel it is intraperitoneal.

I am glad to see that Dr. McKinney took in the whole gastrointestinal tract except the small intestine. This gives me an opportunity to report a case of diverticulitis of the small intestine now in the hospital which is probably not a Meckel's diverticulum, with which we are all familiar. A child five years old was admitted to the hospital with what appeared to be very acute appendicitis. On opening the abdomen the appendix was found to be perfectly normal. Free pus was found in the peritoneal cavity and further search for the source of infection disclosed a small ruptured diverticulum of the ileum, situated at the mesenteric attachment. The child is

still in the hospital, having a stormy convalescence.

I was very much interested in the patient that Dr. Whitman reported in detail, and think he is to be congratulated on the way this patient was handled. I believe that, if these patents are gotten in the interval when free from acute infection, it is comparatively safe to do a resection to cure the patient completely. It looks, however, like she has made a complete recovery by drainage and proper care. The x-ray, of course, is of great value in making a diagnosis of this obscure condition; but even with all we know about it now, the diagnosis and proper handling of a case of diverticulitis is difficult.

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PYELITIS IN INFANCY AND CHILDHOOD *

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For the purpose of this discussion, pyelitis in childhood may be considered under two categories: First, the acute disease which is found chiefly in the young child of the diaper age and is characterized by fever and prostration, with the presence of pus in the urine, and frequently, but not necessarily, associated with disease of some other organ. Secondly, the more chronic type is characterized by remittent fever, occasionally chills, prostration, and larger quantities of pus in the urine, and is generally seen in older children, and is commonly associated with some organic pathological condition of the genitourinary tract, where there is not free drainage.

The frequency with which pyelitis has been overlooked in the past, and the larger number of cases in which the presence of pus from the vagina has been ascribed to pyelitis, has made it a condition that is often not recognized, and almost as frequently mistakenly diagnosed.

Pyelitis occurs about five times more frequently in girls than in boys. Although it may occur at any age, it seems to be more frequent between the ages of three months and three years.

The mode of entrance of the causative organism into the kidney pelvis is a mooted question.

There seems to be three definite possibilites. First, an ascending infection, through the urethra, especially in infancy when vaginal soiling with feces so readily occurs, and possibly explains the frequency in girls. Second, by way of the blood-stream, from some focus of infection elsewhere in the body, as from tonsils and adenoids, otitis and abscessed teeth in older children. Third, the great lymphatic network surrounding the colon and rectum is an ideal route to the bladder and the ureters.

During recent years there has been a growing conviction in the mind of the pediatrist that the

* Read before the Raleigh County Medical Society, June 19, 1930.

infections are frequently accompanied by pyuria, and the pyuria disappears soon after the throat inflammation subsides. Children often show repeated attacks of pyelitis following tonsil infections, and the tonsil-adenoid operation is advised.

Pyelitis following throat infections would presumably be carried by the blood stream, and might be a streptococcus, unless a lowered resistance might invite some other infection.

The causative factor in the great majority of cases is the colon bacillus, although any of the pyogenic bacteria may gain entrance to the kidney pelvis and cause the disease.

Since the colon bacillus is the most frequent organism found in these cases, it would seem that the ascending route through the short female urethra, and the lymphatics from the colon and rectum, offers the better explanations and rather upsets the idea of blood-borne infection from some focus elsewhere in the body.

In colon bacillus infection, only the pelvis of the kidney is involved in mild cases; but in chronic cases the kidney structure may become involved in infections due to staphylococcus and streptococcus. When the lesion is found to be typically cortical it would lead one to think that the infection was carried by the blood-stream.

It has been shown, by hospital statistics, that pyelitis does follow the acute infections, and is proven by the fact that there are two peaks of these infections: late summer, following the acute intestinal disease; August, September, and early spring, following the acute respiratory infections; in February and March, at which time there is a lowered resistance of the child, permitting a secondary infection.

In the instance of unexplained temperature in infants, pyelitis is almost always found to be the cause. The temperature ranges between 101° and 105° F. for several days, with a remission to normal.

During the fever period the child is fretful, uncomfortable, and restless. In severe cases we find rigidity of the neck, and even convulsions, suggesting a slight degree of infection of the meninges.

After the fever passes, the patient is weak but bright, and may exhibit no sign of illness. A diagnosis of indigestion or slight gastrointestinal disturbance is suggested and the case is forgotten.

In a few days the temperature may rise again and run a high, irregular course for a few days, and again subside.

Distinct clinical types may be observed, such as septic, typhoidal or meningitic; but in general the symptoms are inconsistent, so that pyelitis must be considered in all cases of fever of an obscure origin in infancy and the urine carefully examined.

The length of the period of the disease in the simple acute cases runs from three to ten days, and in the severe types two to four weeks.

The emphasis placed on the necessity for examination of the urine of an infant that has fever which can not be adequately explained has made the failure to recognize acute pyelitis exceptional, even though the symptoms do not indicate the site of the infection. Recurrence of the disease is frequent; no doubt due in part to inadequate treatment and the flaring up of uneradicated infection.

Recent work on the pathologic anatomy of pyelitis has shown that, at necropsy, changes are found in the pelvis and also in the renal parenchyma in practically all cases.

As a rule, chronic pyelitis passes through an acute stage which subsides and the disease becomes dormant or relapse occurs. In exceptional instances, severe pyuria with evidence of marked renal destruction may appear when there is no history of a previous acute stage.

"When acute pyelitis becomes chronic, it is usually because of (1) severe nutritional disturbance, (2) focal infection elsewhere, (3) inadequate treatment, or (4) urinary obstruction, such as hydronephrosis, stones of the kidney, ureter or bladder, dilated ureters, duplication of ureters, neuromuscular dysfunction of the bladder, and stricture of the ureter or urethra."

Diagnosis.—Pyelitis is diagnosed almost entirely from urinary findings, and repeated examinations may have to be made before pus is found.

The diagnosis of pyelitis presents no special difficulties if the urine is examined thoroughly. In fact, the diagnosis depends almost exclusively upon the results of repeated and carefully made examination of the urine, and here I may insist that the difficulties of obtaining the urine of the young child have been greatly exaggerated. The use of cotton to collect the fluid is not practicable, because the formed elements of the urine are strained out and the test urine is a clear solution which is available only for chemical tests. For collecting urine I use a wide-mouthed bottle for girls and a test tube for boys, these containers strapped to the body with adhesive plaster. As a reserve resource we have, of course, the use of the catheter. Urine obtained by any of these

methods should neither be allowed to deposit nor be centrifugalized, because we do not want a concentration of the formed elements for microscopic study, but a suspension of these in the fluid portion. What is wanted is a leukocyte count of this suspended urine. From another angle, if the urine stands, alkalinity may be the reaction and may dissolve the leukocytes. If there are as many as ten leukocytes or more to the microscopic field, the diagnosis of pyelitis may be confidently made. Some clinicians regard two leukocytes as suspicous of pyelitis. Examinations should be followed up for several days, and at least one examination on each of the three successive days before a final diagnosis, because one or two tests may be negative even if the disease is present.

In order to guard against the danger of mistaking mild vaginitis complicating a febrile complaint for pyelitis, it is well to caution the mother to wash the external genitalia carefully before obtaining a specimen of urine. Such a procedure will usually do away with the danger of misinterpreting the presence of pus cells in the urine.

Prognosis.—The course of pyelitis in patients with a normal urinary tract is usually favorable, but the acute symptoms may be severe; yet it is rarely that infants die from acute pyelitis, though they may die from a complicating nephritis.

Treatment.—The treatment to some extent depends upon the age of the child and the stage of the disease.

During the fever period, abundance of fluids should be given, rest in bed, sponge or lukewarm baths for hyperpyrexia. For a six-months-old child about one pint of water, and for a one-year-old child two pints, should be given daily.

If fluids can not be given by mouth, they can be supplied through the stomach or nasal tube or by entercolysis.

Should there be persistent vomiting, hypodermoclysis should be resorted to. In extreme cases, sterile water may be given intraperitoneally in amounts up to 500 c.c., or the physiologic normal saline may be used instead, in the same amount.

The important thing is to get as much water as possible into the patient, irrespective of age, to hold the specific gravity of the urine below 1012. The medical treatment of many authorities consists in the use of alkalies in the form of sodium bicarbonate or potassium citrate until the urine becomes alkaline, and may be given in doses of five to ten grains every three hours, depending, however, upon the age.

After continuing the alkalies for a few days, then change to urotropin in combination with the acid sodium phosphate in amounts of 16 to 24 grains daily. Caprokol has been used by some, but has never been satisfactory in my practice.

A favorite remedy of mine is a combination of urotropin and potassium citrate in solution, recommended by Dr. Gresenberg of the Cleveland Clinic Hospital for Children, and is a combination acid and alkaline treatment:

℞—Urotropin . . . . . Gr. 48
Potassium Citrate . . . . . Drams 2
Elix. Simplis, qs. . . . . Troy oz. 3
Sig.: Give ½ to 1 teaspoonful according to age, 3 hours apart.

While this combination has worked nicely for me in many cases, yet we may expect to have cases unbenefited, the same as with other treatments.

Some authorities claim that the alkaline treatment is the best and only treatment, while others claim the same merits for urotropin or acid treatment.

Most cases of pyelitis in children are due to the *Bacillus coli*, which flourishes best in an acid medium, and in these cases alkalies should be freely administered as the treatment of choice to begin with. The only way to determine the proper dose is by watching the reaction of the urine. As soon as the urine becomes strongly alkaline and the fever and other symptoms subside, the dose should be diminished. At times it is difficult to alkalize strongly acid urine by ordinary doses of potassium citrate, and large doses will occasionally upset the stomach and cause diarrhea. Then this drug must be substituted by sodium bicarbonate. If after ten days of treatment no benefit is apparent, urotropin should be substituted in daily doses of fifteen to twenty-five grains, suitably divided. But when this drug is given, an acid concentration of the urine is desirable; otherwise, the formaldehyde which exerts the antiseptic effect will not be broken off from the urotropin. To obtain this acid concentration, we should give large doses of acid sodium phosphate, twenty-five to forty grains daily—in divided doses, of course, and depending on the age of the patient. The urotropin treatment should also be given for ten days, after which, if there is no further improvement, a return to alkaline therapy may be indicated. When urotropin is given too long, we often get hemorrhage from the kidney, due to irritation which we have to be cautious about.

As to food, young infants should receive mild

diluted alkaline water, some cereal and fruit juice. Older children may have bread and butter, cereals, stewed fruits, cooked vegetables, and pudding. Goppert and Langstein give, in the afebrile pyelitis cases, meat and eggs in addition to the foods mentioned above.

If after three or four weeks of intensive medication the infection does not disappear, the case should be referred to a competent urologist for cystoscopic examination and ureteral catheterization. Obstructions to the urinary flow or malformations of the kidneys or ureters are conducive to infection. If pyelitis is discovered early and treatment promptly instituted, there is usually a prompt response and the second fever period does not occur. But if the disease has existed several weeks undiagnosed, it may require several months of intensive treatment to effect a cure. Every case should have frequent urine examinations for six months after an apparent cure is established.

Close coöperation of pediatrician and urologist will undoubtedly save much valuable time in treatment in these cases, and will prevent much injury to the kidneys.

SPORADIC TYPHOID FEVER, WITH DISCOVERY OF A CARRIER *

By ROBB SPALDING SPRAY, PH.D.
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Morgantown, W. Va.

Morgantown, like other cities of our state, is troubled with the occurrence of sporadic cases of typhoid fever. Casual investigation of such cases usually fails to reveal any direct community of source. From time to time small family epidemics have occurred in our suburbs, and the disease seems to be altogether too common among the population of the small mining towns and camps in the vicinity. These cases are usually traced tentatively to polluted wells and springs which serve as the only available source of drinking water to such communities.

Morgantown, however, is supplied with a chlorinated, and to some extent a filtered, water. This water is subjected to a daily test at the pumping station, checked by a weekly test at our city laboratory. At no time during the past nine years has the water at the tap shown the presence of *Bacillus coli*, and the bacterial count is uniformly low, running usually around only one to three colonies per cubic centimeter. During this same period our water supply has never been subjected to suspicion as a source of the sporadic cases occurring within the city limits.

We have noted that most of the cases have developed recently in one section of the city, which fact suggested the possibility of its milk-borne origin. During the summer of 1928 six cases were reported within a brief period from a district lying just beyond the city limits, and adjacent to the section just referred to. At that time the county health officer investigated a certain dairy "X" in that vicinity, which was known to have supplied milk to some or all of the families involved. As a result of certain examinations made from the milk and water samples it was reported that typhoid bacilli were present in both the milk and the water. In view of the difficulties of isolating this organism from such sources, it may be considered doubtful if such was the case. However, a drilled well was advocated, and this was installed. We have no knowledge of further investigation or improvements.

On April 29 of this year, a blood specimen was submitted to our laboratory by a local physician from a fifteen-year-old boy, "G," living in this same region. A Widal test was positive with two antigens to a dilution of 1:320. A clinical case of typhoid developed. This boy is a heavy consumer of raw milk obtained from this same dairy, "X."

During the investigation of his case by Dr. H. H. Pierce, the city health officer, it developed that he drank water from a well in the vicinity at the home of a Mr. "B." This is a dug well on a hillside, and is not protected against surface or subsoil pollution. Bacteriologic examination of a water sample from this well showed a total count of approximately 4,000 colonies per cubic centimeter, and *Bacillus coli* was confirmed in all of five standard 10-c.c. portions tested in lactose broth. Gross pollution was thus indicated, and suspicion was temporarily attached to this well as a possible source of the case.

Mr. "B," the property owner, is reported to have had typhoid fever some twenty-five years ago, as well as two of his sons, one of whom died at that time.

During the summer of 1929 a small girl, "F," living in the same house with the boy "G," developed an atypical case of suspected typhoid. This case

* Original paper.

was treated symptomatically, and we have no record of any confirmatory tests. During the investigation of this most recent case, "F," fecal and urine specimens were obtained from the girl. Bacteriologic examination showed no suspicious colonies from the feces, but the urine showed typhoidlike colonies. Further studies of these, however, proved them to be of some paratyphoid type, giving initial reactions of *Bacillus paratyphosus* A. It may develop that this case was paratyphoid rather than atypical typhoid, as the case was reported. At least this investigation tentatively rules out the probability of transmission by contact with the boy "G."

In conducting further investigation, Dr. R. C. Farrier, county health officer, obtained fecal and urine specimens from Mr. and Mrs. "X" and son, who conduct the small dairy referred to above. Cultures from father and son were negative for any suspicious types of colonies. However, fecal inoculations from Mrs. "X" on Endo's medium showed very numerous suspicious colonies. The cultures from urine were negative.

Pure cultures of these suspicious colonies were isolated, and in routine diagnostic mediums gave reactions typical of *Bacillus typhosus*. Pure cultures tested against specific antityphoid serum agglutinated to the full titer, 1:5,000, of the serum. Thus, we regard it as established that Mrs. "X" is a fecal typhoid carrier.

Further epidemiologic investigation of the family "X" repeals a report that both parents of Mrs. "X" died of typhoid fever many years ago. A brother of Mr. "X" is stated to have had typhoid fever some twenty-five years ago. All three present members of the immediate family, however, deny knowledge of any personal past history of infection. About three years ago a Mr. "G," a brother of Mrs. "X," was treated for a severe case of typhoid, and at that time a positive Widal test was reported in his case from our laboratory.

It appears, from this epidemiologic study, that we have located the probable source of this sporadic and epidemic sectional typhoid fever with which we have been intermittently troubled for a number of years.

Other possible sources, of course, are known to exist in the environs of our city, which may account for occasional contact cases. However, a combined action on the part of the city and county health authorities will, we trust, remove the further menace of this known carrier.

CASE REPORTS

ACUTE ILEO-COLITIS (SEPTIC)

By ALBERT H. HOGE, M.D.
Bluefield, W. Va.

A little boy, Cline Hall, age eight years, was referred to the hospital by Dr. W. P. Beane, of Keystone, with a diagnosis of an acute abdomen, and was admitted at about ten o'clock on the night of June 4, 1930. The members of the surgical staff being unable to agree upon a diagnosis, the author of this report was called out of bed and found the following condition:

Past history: Robust, active boy all of his life; had chickenpox and whooping cough about one year ago; mild influenza in November, 1929; no other illnesses. Has been constipated from birth, and during the past few years has been a very hearty and rapid eater.

Family history: Entirely negative.

Present illness: About two weeks before admission, the patient had an upset condition and ran a temperature several degrees above normal for three days. Returned to school afterwards, but never returned to normal condition. This condition was not diagnosed. The mother felt that he was feverish at times after returning to school. Treatment was symptomatic, and the boy was able to play outdoors each day. On June 1, three days before admission, he was given a "hot dog" at bedtime by his father; apparently no ill effects resulted from this. On June 4, the day of admission, he played outdoors during the forenoon, ate an ice cream cone at about 10 A.M., and about 11 A.M. his mother found him on the porch, complaining of pains in the abdomen and with a desire to go to the toilet. After some effort the bowels did not act, and he was given a laxative and found to have a temperature of 102°. The pains continued to grow rapidly worse, so Dr. Beane was called at about 12:30 and found him to have a temperature of 104°, severe cramps, abdomen rigid and boardlike. Two high enemas were given, with very little results. Later, an opiate was administered; temperature by mouth was now 105°. During the afternoon the enema was returned in the form of several watery, offensive stools. That night, at eight o'clock, he was sent to the hospital with the previously mentioned diagnosis.

Examination showed the boy restless, tossing in bed, semi-delirious, face flushed, temperature 104°,

[1] From St. Luke's Hospital, Bluefield, West Virginia.

pulse 110, respiration 32. Abdomen flat, soft, pliable, moderate tenderness over whole. Involuntary stool during examination. Respirations short and shallow. Apparently some dullness over base of right lung; no abnormal breath sounds.

Laboratory findings: Urine negative. White blood cell count, leukocytes 38,500, polynuclears 94%.

A diagnosis of pneumonia was made and accepted by all.

The following morning, at nine o'clock, patient was quiet; had slept fairly well. Had three stools during the night: one large, solid one, two were liquid or semi-solid, one was involuntary. Temperature was 103°, pulse 108, respiration 26. Examination of chest was entirely negative. The abdomen was moderately distended, very rigid and hard, although there was very little pain.

X-ray plate of chest showed both lungs normal. Blood findings now were: leukocytes 41,850, polynuclears 84%.

A diagnosis of pneumonia was, of course, no longer tenable, but was changed to widespread peritonitis due to perforation, and an immediate operation asked for.

The question naturally arises as to the nature of the perforation. Traumatic could be eliminated by the history. The appendix was next considered, but the sudden onset, without a previous history of pain or soreness in the abdomen, as well as lack of tenderness over the appendix upon admission, and the unusually high fever so soon, was sufficient, we felt, to exclude that. Tuberculosis of the intestines was also considered, but the history of a strong, robust, healthy boy until two weeks previously should rule that out. Next, typhoid perforation was considered. The history of illness with high fever two weeks previously in a child which had not been perfectly well since was certainly suggestive. Consideration was also given to the fact that he came from the center of the coalfields, where sanitary conditions are not the best. The continued high fever, with comparatively slow pulse, caused us to accept the latter as the most probable diagnosis.

At 11 A.M. on June 5 the abdomen was opened through right rectus incision by Dr. T. E. Vass. Upon opening the peritoneum, a moderate amount of sero-purulent fluid escaped, being rather brownish in color. The cecum was examined first, and found to be red and markedly injected, as was the appendix; however, the appendix did not show any more inflammation than did the cecum. The ileum was very much inflamed, being very red and injected; this was followed up to about the junction with the jejunum, where the redness abruptly ended. No perforations could be found there; no enlargement of Pyer's patches was noted. The colon was examined; the inflammation extended to about the middle of the transverse part, where it ended abruptly. The stomach and the whole intestinal tract was carefully examined, but no perforation could be found. About two ounces of brownish fluid were sponged from the pelvis; before doing this, however, smears were taken from it for study. The incision was closed without drainage.

The following morning he was quite comfortable. The bowels had not acted since operation; temperature 101°, pulse 92. The blood showed leukocytes 27,500 and polynuclears 87%. The subsequent course was about that of the usual abdominal section, the temperature being normal after the third day and the blood findings returning to normal in one week.

Blood culture made the day of operation remained negative. Smears from the peritoneal cavity showed many pus cells; no bacteria were noted. Cultures from same did not show any growth.

The patient was discharged from the hospital fifteen days after operation, walking and feeling well, and the case was entered upon the hospital records as "acute ileo-colitis (septic)."

EXOPHTHALMIC GOITER IN A CHILD AGED SIX YEARS

(REVIEW OF LITERATURE AND REPORT OF CASE)

By HERBERT GARRED, M.D.
Charleston, W. Va.

In reviewing the literature on this subject we were amazed at not finding more information and case reports. It seems that the reports of Buford, Sattler, Schkarin and Klans are all available, unless we resort to the history files of the large clinics.

In Buford's review of both foreign and American literature up to 1922, he found only eighteen cases below the age of twelve years. Two were operated. His patient, age six years, was the youngest at that time. Since that time, we find in American Clinic files frequency of exophthalmic goiter at an early age.

Plummer, at The Mayo Clinic, has on his files six cases, four females and two males, under seven years of age, all operated.

Lahey, of Boston, reports one case at three years,

nine cases under ten years; all operated, no mortality.

Crile, of Cleveland, reports that his records are all confused, owing to the recent fire, but recalls two cases operated recently, both under seven years of age.

Only one man—Lahey of Boston—gives us any information pertaining to x-ray therapy in these

Front View—Illustrates exophthalmus and bilateral enlargement of thyroid.

cases. He states that there was not a single case of his series that showed any improvement.

We present the following case:

Female, age six years, American, entered the hospital on July 2, 1929, complaining of nervousness, palpitation of the heart, bulging of the eyes, and amnesia. Past history shows that the child was in the hospital three years ago; tonsils and adenoids were removed. Her entrance was preceded by three attacks of tonsillitis. On examination her tonsils were found to be enlarged and infected; otherwise, physical examination was negative. At this time her pulse remained around 85; temperature was a normal curve. She was discharged in good condition. Her only illness was measles; no other childhood diseases, no rheumatism, no arthritis.

Family history: One sister underweight and nervous, but no definite signs or symptoms of goiter trouble. Two brothers normal in every respect. Father living and well. Mother underweight and nervous and easily excited. She entered the hospital during the child's hospitalization for a tonsillectomy. At the time her basal metabolism was plus-11; her physical examination was negative for thyroid trouble. There is no history of thyroid trouble in the family as far back as two generations.

Present illness: Illness began ten weeks before admission, manifested by nervousness, wild, incoordinate movements, excitability, palpitation of the heart, bilateral exophthalmus, amnesia, increase in appetite, rapid loss of weight, tremor, tachycardia.

Patient had to be taken out of school two weeks after illness began. The teacher complained that the child was restless and could not attend to her work properly. One month after the illness began, patient developed acute laryngitis and bronchitis, which made all of her present symptoms worse. At this time she had vomiting, headache, and loss of appetite. When the acute symptoms subsided the symptoms of tachycardia, bulging of the eyes, pulsation of vessels of the neck, and nervousness were noticed by the attending physician to be very much increased.

Physical examination revealed a fairly well-

Side View—Showing exophthalmus and bilateral enlargement of thyroid.

nourished female child, lying extremely restless in bed, skin flushed and moist over the entire body, no pigmentations; normal growth of hair; no deformities; child swinging arms and legs continuously as in chorea. She would cry and laugh at intervals; there was marked bulging of both eyes—true exophthalmus. Von Graffe and Von Stelwig signs positive; no muscle weakness. Pupils reacted to light

and accommodation. Upper and lower lids markedly injected; slept with lids slightly separated. Sinuses were negative; ears were negative; nose was negative. Examination of mouth showed teeth and gums in good condition. No tonsil tissue present; throat not injected; tongue protruded in the midline; definite pulsation of vessels in the neck. Bruits could be heard over the thyroid gland. Thyroid gland enlarged bilaterally to the size of a horse-chestnut; both lobes smooth and firm; no nodules palpated.

Chest: Heart has a fœtal rhythm, rate 150. On inspection, whole precodium pulsates; P. M. I. 5 and 6 inner space 5 curve to left. Soft presystolic murmur heard over apex, transmitted to axillæ; no irregularities in rate or rhythm. Blood-pressure 98 64. Lungs clear, no evidence of pathology; rate, 24 per minute. Abdomen negative. Extremities, tremor, 25-30 per minute. Reflexes all normal.

Laboratory findings: Red blood cells 4,500,000, white blood cells 6,400, hemoglobin 70%, polymorphonuclears 60%, small mononuclears 38%, transitionals 2%. Wassermann negative; coagulatime three minutes; phenolsulphonephthalein test 65%, blood urea 40 mgs., urea nitrogen 19 mgs., blood sugar 80 mgs., urine entirely negative. Von Pirquet's tubercular test negative.

X-ray of the chest showed no pathology in the lungs, no enlargement of thymus glands.

Basal metabolism: Good coöperation from the patient; day after entrance plus-35, Harris-Benedict, using combined weight and height.

Treatment.—Child left in bed, isolated, assuring complete physical rest. High carbohydrate diet; no medication. This treatment was continued for one month. All symptoms abated except tachycardia, exophthalmus, and enlarged thyroid gland. At this time x-ray therapy and Lugol's solution were resorted to.

After waiting three weeks no results were obtained from x-ray therapy and the use of Lugol's solution. The tachycardia, exophthalmus, and enlarged thyroid gland remained the same, so operation was deemed necessary. Basal metabolism tests had been made at intervals of two weeks; they ranged from plus-19 to plus-55, average plus-22. The last basal metabolism test before operation showed plus-19.

Operation was done September 19, 1929, by Dr. George S. Stewart; usual bilateral partial lobectomy. Pathological report: Typical picture of toxic thyroid of the exophthalmic type.

Post-operatve: Soft rubber drain removed in 48 hours; half the silk sutures removed on the fourth day, remaining sutures removed on the fifth day.

Recovery was uneventful. Tachycardia gradually decreased and the patient was walking around the room on the tenth day. In two weeks the basal metabolism was minus-24. On the day of discharge the pulse was 85. The wound had healed and, with the excepton of slight exopthalmus, all symptoms had abated.

Conclusions.—1. X-ray therapy is of no value in the treatment of exophthalmic goiter in children.

2. That exophthalmus in children below the age of ten years is much more prevalent than we have heretofore known.

3. That basal metabolisms in children are very indefinite, as shown by the wide range of results obtained in this case.

4. That complete rest in bed and a high carbohydrate diet is the greatest factor in preoperative treatment of these patients.

5. That the etiology of pre-adolescent toxic goiters is very indefinite.

BURIED SKIN GRAFTS IN BURNS OF CHILDREN *

(NEW USE OF AN OLD METHOD OF SKIN GRAFTING)

By E. BENNETTE HENSON, M.D.
Charleston, W. Va.

This paper deals with a new use of an old principle of skin grafting. The evolution of plastic surgery is most interesting. The reconstruction of the nose was successfully accomplished by members of the Tilemaker Caste in India many years before the English-speaking surgeon attempted it. Galen and Celcus mention the Indian method of restoration of nose, ear and lip by use of neighboring skin, and in the fifteenth century Alexander Bendictus swung a skin flap from the arm to the face, holding the arm by means of a harness.

Baroni, in 1804, demonstrated by experiments on sheep that free skin transplantation was practical. An American surgeon, Mason Warren of Boston, in 1843 successfully used a free graft of whole thickness skin to repair a defect of the nose. In 1869 Reverdin used "epidermic grafting" to hasten healing of granulating wounds. This is the first record of the transference of small, detached pieces of skin. This was soon followed by Ollier in 1872, who used much larger and deeper grafts. Thiersch in 1874 transplanted whole thickness grafts similar

* From the Clinic of the Charleston General Hospital.

to Ollier's method. Wolfe in 1875 introduced the large, fat-free graft which is often used today. All of these "auto" graft methods were conceived and proven successful in an age when aseptic surgery was unknown. Halstead, in 1890, was the first to render the field sterile before attempting grafting.

The use of skin from some one else, known as isograft, has been attempted with indifferent success for many years; but not until perfect matching of blood was found to be essential was it practicable.

Zoögrafts have also been attempted. The transfer of skin from frogs, pigeons, wings of pullet, young puppies, rats, rabbits, guinea-pigs, and dogs has been reported successful. These efforts are of interest only from a historical point of view.

Moszkowicz in 1916 and Esser in 1917 described a method of burying an Ollier-Thiersch graft beneath the skin after the graft had been sutured to a mold with the raw surface outward.

This principle of buried grafting or "epidermic inlay" of Esser has recently been used by Wangensteen after the method of Wilhelms Brown. Wangensteen's reports stimulated me to try the method on burns of children which had proven to be difficult to treat.

Those experienced in treating burns of children know how difficult it is to treat the burns of the buttocks in the area around the anus. Three children with burns of this nature were in the wards

FIG. 1.—Three children with burns of buttocks.

of the hospital, making little if any progress toward healing. I decided to try burying the small grafts in the granulation tissue, and the results were very pleasing. To date I have used this method in twenty cases, most of them children. Three cases of buttock burns are reported:

CASE I.—Mary D., age 12, Ward, West Virginia. Admitted December 26, 1929, with second-degree burns over back, buttocks, right thigh, chest, and right forearm. (Fig. 1-A.)

History: Child's clothing caught fire from a gas stove. Quickly extinguished and emergency treatment rendered.

Physical examination: Negative, except for burns in area described above, majority of back and right thigh being involved.

FIG. 2.—Same as Fig. 1-B, showing large burned area. The white islands of new skin do not show clearly.

Burns cared for routinely. Child was very ill; given saline and glucose, and two blood transfusions. Skin grafted on April 13, 1930, with no takes. On the 19th of April and again on June 5th, buried grafts were used, with 50% and 75% takes. A note made August 1 shows most of area healed. Will need one more graft.

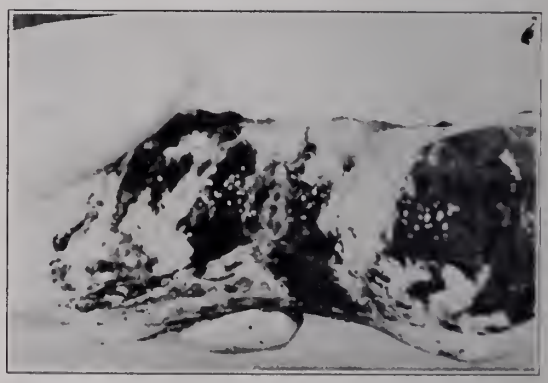

FIG. 3. Photograph of Fig. 2, taken one month later, showing rapid epithelialization as result of the buried skin graft. The white blotches show new skin.

CASE II.—James A., age 6, Widen, West Virginia. Admitted March 5, 1930, with chief complaint of second-degree burns about back, buttocks, and legs. (Fig. 1-B.)

History: Sisters states that boy fell backward into a burning grate of hot coals, burning back and posterior part of legs.

Physical examination: Well-nourished and well-developed male child. Negative except for burned areas. From third lumbar spine down to the knee, involving most of the back of the buttocks and posterior portion of thighs.

Burns cared for as in routine emergency and child had healthy area ready for skin graft, which was first done March 27, 1930, with 25% takes. Repeated by buried grafts in granulation May 5, 1930, and child was discharged from hospital June 14, 1930, with majority of area healed.

Fig. 4.—Photograph of Fig. 1-B, taken one month later.

CASE III.—Jewel M., age 6 years, referred by Dr. A. A. Smith. Admitted to hospital February 22, 1930.

History: On February 20, 1930, while standing in front of the fireplace, her clothing caught fire. Burns about body and all around the vagina, both hands, over lumbar and lower dorsal area of back, down over the posterior surface of both legs and around the buttocks. All burns second-degree variety. (Fig. 1-C.)

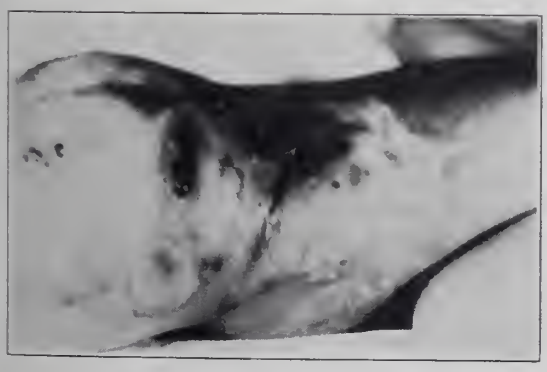

FIG. 5.—Photograph of Fig. 1-C, taken mone month later.

The method used is the same as the small skin graft of Ollier-Thiersch, except that instead of placing the graft on the granulation tissue you push the graft in the granulation tissue with a blunt needle until the graft is entirely covered up. It doesn't matter if the graft is upside down or sideways; it will grow as shown by a little white island of skin on the surface of the granulation tissue in a very few days.

First skin graft ("Ollier graft") March 10th, with 25% takes. On March 29th buried grafts were attempted, with 75% takes. On April 19th the second buried graft series was done, with 100% takes. Child discharged May 6th, entirely healed.

The chief advantages of this method in burns of children are:

The grafts will grow in the presence of a mild infection.

The grafted area does not need a fixation dressing.

The nursing routine is not changed following the grafting.

The granulation tissue is essential to the success of this form of grafting, and hemorrhage is reduced to the minimum.

In a rather large series of severe burns over a period of several years I have become eager to grasp any method that offers an improvement over the ones now frevailing. The severe burns of children with low vitality, anemia, and nephritis presents a deplorable picture. The form of skin grafting as reported above is a vast improvement over other methods.

INTERESTING CHEST CASE

By JOHN WILLIAM MOORE, M.D.
Charleston, W. Va.

M. H., male, Syrian; occupation, peddler; age 50; first seen on March 4, 1929.

Present complaint: Walked into the office, complaining of pain in lower right chest, and cough.

Past history: Never was sick in life until two years ago, when he had pain over the upper abdomen on the right side and a diagnosis of gallbladder disease was made. Pain lasted a few weeks and disappeared without any definite treatment. Has had a moderate amount of cough for many years, which gave him little trouble or concern. Has been an inveterate cigarette smoker all his adult life; takes an occasional alcoholic drink.

History of present complaint: Four weeks ago, patient had a chill and fever; fever lasted two to three days, as much as 102°. Two weeks after chill, pain developed over lower right chest, going from the front to the back. Had more cough than usual from the beginning of his illness four weeks

ago, with a moderate amount of expectoration; expectoration contained a small amount of blood; also had shortness of breath since the beginning of his illness. Was in bed three weeks. For the first two weeks of illness, vomited after eating. No vomiting for the past two weeks. At the present time, appetite is poor; sleeps fairly well; pain over lower right chest, cutting in character, increased with breathing and cough. Sweats day and night from the beginning of illness four weeks ago.

Physical examination: Well-developed, well-nourished man, 50 years old; height, five feet four inches; present weight 130 pounds, normal weight 135 pounds. Mouth in bad hygienic condition; many carious teeth, and pyorrheal involvement. Skin not anemic; no jaundice. Pulses 116, regular, equal, slight thickening of radials. Temperature when first seen was 100 3/5°. Bones and spine, glands and lymphatics, neck and thyroid, ears, nose and throat negative. Eyes, sclera no jaundice; pupils react to light and accommodation, equal. Mucous membranes not pale. Patella reflexes normal. Heart, apex in nipple line, fifth interspace, no valvular lesions; A^2 and P^2 equal and not accentuated. Lungs, flat to fourth rib right in front, with diminished voice; no râles. Liver slightly enlarged, smooth, not tender. Spleen and kidneys not palpable. Abdomen soft; no tenderness, fluid or masses. Gallbladder, mass apparent in this region, with moderate rigidity and slight tenderness. Rectum, anus, and extremities negative. No edema apparent in any part of body. Blood-pressure 130/60. Urine acid, faint trace albumin, no sugar, no diacetic acid. Microscopic examination 15-20 pus cells, large amount of mucus, and an occasional granular and hyaline cast. Blood, hemoglobin 90%, white blood cells 16,000, polymorphonuclears 80%, S. L. 20%, Wassermann negative.

Here was a man who had apparently been well until four weeks ago, and was suffering with some acute illness. His outstanding symptoms were cough with expectoration and small amount of blood, and, on moving and breathing, pain over lower right chest. His physical examination revealed a well-nourished man with a mass over the gallbladder with slight tenderness but no jaundice, and a pulse of 116; temperature 100 2/5°. Flat over upper right chest; profuse sweats, and a trace of albumin with a few pus cells. Apparently there is some acute condition of four weeks' duration developing in a man who previously had been in good condition.

Further investigation suggested an x-ray of gallbladder and chest. On March 9, four days after first examination, x-ray of gallbladder was negative; x-ray of chest, heart shadow normal. Marked area in infiltration in right central lung which seems to extend from the mediastinum. There is some fixation of the diaphragm on the right side. The growth on the right side has the appearance of a tumor. Tumor of the mediastinum is probably malignant. This would account for his cough and pain, but does not account for his temperature, and is not consistent with his good general condition.

March 12th, still continues to come to the office. Temperature 100 2/5°; chest examination unchanged. A needle was inserted between the seventh and eighth ribs on the right side behind with 1 c.c. of clear fluid withdrawn; also between the fourth and fifth ribs in front on the same side with 30 c.c. of bloody fluid. Both fluids were negative for any bacterial growth.

March 19th. Another x-ray of chest is as follows: Increased density upper lobe of the right lung, over its entire area, with interlobular thickening between the upper and middle lobes. Rounded dense area, suggestive of growth of right lung at seventh interspace, spotting sixth, eighth and ninth ribs on the left and the seventh rib on the right—suggestive of metastatic process.

May 30th. Unable to come to the office, and therefore is seldom seen. Today note there is swelling of left arm and hand; complains of much pain in arms and legs.

June 10th. Swelling of right arm and hand, with much pain in arms and legs.

June 15th. General edema, and pain is severe; is very short of breath.

June 30th. Died. Duration of illness about five months. Autopsy showed whole of the right lung markedly adherent, with a tumor mass in the upper lobe.

Pathologist's Report: Gross appearance, grayish-black with many pinkish-gray, solid nodules resembling tubercles and caseous areas varying in size from a few millimeters to a solid infiltration. Microscopic findings: The essential lesion is a carcinoma of round and cuboidal cells. The origin is apparently from the bronchioles. The malignancy is grade four. The contiguous lung shows a severe pneumonitis with dense polynuclear cell infiltration, edema, and epithelial desquamation. The neoplasm shows no degeneration.

From the above we can conclude: First, that we can have a malignant condition in an advanced state

without emaciation and with the patient apparently in good general condition. Second, that we can have a malignant condition in a patient who is running a temperature and all his findings suggest an acute condition. Third, that a probable diagnosis of cancer of the lung can be made with the aid of the x-ray and by aspiration of the chest. Fourth, that the autopsy reveals a pneumonitis which explains the temperature, leukocytosis, and acute condition, and should have been detected by physical signs.

TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association.

Research in Tuberculosis

Research in the chemistry and biology of the living tubercle bacillus required far more in equipment and personnel than could be found in any single laboratory. There were, however, numerous individuals equipped to carry on highly specialized and technical research. The Committee on Medical Research, organized in 1921, succeeded in interesting a considerable number of specialists in attacking the study under a coöperative plan. Twenty-one different laboratories are now so correlated, and workers of these laboratories meet in frequent conferences under the leadership of the chairman of the committee.

Materials Standardized.—In order to make the results in different localities comparable, it was essential first to standardize all products. Esmond R. Long, of the University of Chicago, produced a synthetic medium composed of chemically pure ingredients of exactly known quantities and qualities for the growth of the bacteria. As no laboratory was equipped to grow the bacteria in quantities sufficient for the desired analyses, two manufacturers, the H. K. Mulford Company and Parke, Davis and Company, generously undertook to grow and supply such raw materials. Both the bacteria and the synthetic media in which they are grown are subjected to research, the latter to determine the chemical changes occurring as the result of the metabolism of the bacteria. Up to the present time, five varieties of bacilli have been produced and subjected to analysis—human tubercle bacillus H-37, the bovine, the avian, non-specific timothy grass, and lepra bacilli. After filtration, the bacteria are shipped to Sterling Chemical Laboratory at Yale University and the filtrate to the Department of Pathology of the University of Chicago.

Bacillus Is Fractioned.—Under the direction of Treat B. Johnson, of Sterling Laboratory, the bacterial residue is broken up into isolated fractions, or pure substances, some of which were hitherto unknown to chemistry. Similarly, at the University of Chicafio, the filtrate, or medium, is subjected to chemical disintegration. These several fractions are then sent to the Rockefeller Institute, where, under the direction of Florence R. Sabin, they are tested out individually on animals for their physiological effects. At the same time, a clinical study is made of the fractions by David R. Lyman, of Gaylord Farm Sanatorium.

Thus far, there has been isolated from the bacteria and from the medium on which they were grown a pure protein substance which produces the skin reaction typical of tuberculin. It has also been shown that a certain fat fraction stimulates the growth of the monocyte (the cell in which the tubercle bacillus grows and is conveyed) far beyond

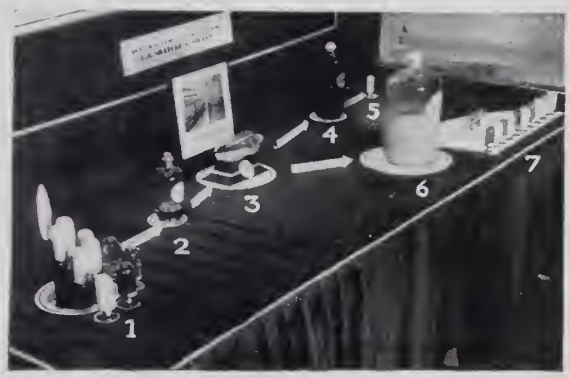

EXHIBIT ILLUSTRATING FRACTIONING OF TUBERCLE BACILLUS
1. Ingredients of Long's media.
2. Long's media.
3. Tubercle bacillus culture on Long's media.
4. Bacterial filtrate.
5. Protein 304 F precipitated from filtrate.
6. Bacteria precipitate (tubercle bacilli).
7. Pure chemical products derived from bacteria.
—*Courtesy H. K. Mulford Co.*

the rate of growth of other cells. It has further been demonstrated that the sugar fractions or polysaccharides of the tubercle bacillus are chiefly responsible for the fever and rapid pulse and that they possess a killing power for tuberculous animals. It appears also that it is the polysaccharides which determine the distinctions between the human, bovine, and avian types of tubercle bacillus. The task of testing and classifying the biologic effects of all the types of bacillus is still in its early stages.

Chemistry of Body Cells.—The changes in living cells brought about by the action of the tubercle

bacillus are being studied by R. S. Cunningham at Vanderbilt University. The fact that tuberculosis is finally a problem of the living chemistry of the tubercle bacillus in symbiotic existence with the living chemistry of body cells has led to this attempt to study the influences of various substances on the several types of cells composing the body. Supplementing Dr. Cunningham's work, Eugene F. DuBois and Paul Reznikoff of Cornell University are making a comparative record of the respiration rate of the living tubercle bacilli and of body cells, both before and after infection with tubercle bacillus. (Comment: If, for example, a means could be found for disturbing or disrupting the synchronism of the respiration rate of the tubercle bacillus and the monocyte, which is the host of the bacillus, the bacillus would probably perish before it had been conveyed to the soil on which its growth is possible.)

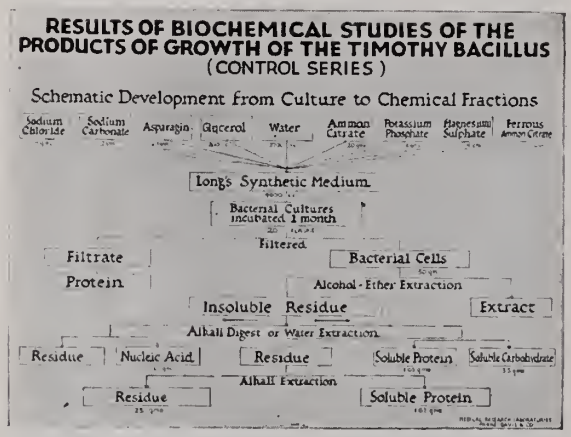

CHART ILLUSTRATING FRACTIONING OF TIMOTHY BACILLUS (CONTROL SERIES)

—*Courtesy Parke, Davis & Co.*

Ross G. Harrison and George A. Baitsell, of Yale University, are carrying on a study of scar-tissue production, which is so important a factor in tubercle production. "It would now appear," they report, "that the finer chemistry of the development of the fibrils in the ground substances and fluids of the body has many points in common with the fibrillation of gelatin and blood clotting."

Latent Tuberculosis.—A study of latent tuberculosis was started by Eugene L. Opie at Washington University in 1923. Shortly after, Dr. Opie removed to Phipps Institute, where research in childhood type of tuberculosis is being continued as a contribution to the group project. Another study is being made at Johns Hopkins Hospital by E. A. Park on tuberculosis in infancy.

L. Van Es, at the University of Nebraska Agricultural College, is studying the distribution of avian tuberculous infection in mammals other than swine.

Ernest L. Walker, of the University of California, investigated the therapeutic value of chaulmoogra oil, which study was discontinued when it was proved that this remedy, so potent in leprosy, has no effect on tuberculosis.

In his conclusions the author states: "The work, although now pursued for a number of years, may still be considered to be in its infancy. Whither it leads, it would be idle to speculate. I believe it is no breach of confidence to say that, in a recent statement to me, Dr. Sabin remarked that she did not know when she had been so deeply thrilled as by the possibilities of this extensive study and the results toward which it might be leading."—KENDALL EMERSON, M.D., "Research in Tuberculosis," *Journal A. M. A.*, March 15, 1930.

Incorrect Labeling

Tablets Folia-Digitalis (Upsher Smith) 1 grain, Tincture Digitalis (Upsher Smith) and Capsules Folia-Digitalis (Upsher Smith) 1 grain, were exempted by the Council on Pharmacy and Chemistry as having the status of official substances. The Council reports that a committee for the study of the actions of digitalis in patients suffering with pneumonia used tablets of digitalis Upsher Smith and tablets of digitalis of another firm, and directed that patients receive these in uniform doses calculated to induce a moderate degree of digitalization, assuming that both specimens of tablets were correctly labeled; that, after a total of 258 patients had been treated, it was discovered that the tablets of digitalis Upsher Smith induced both severe and minor toxic symptoms far more frequently than those of the other firm, and that an examination of the records brought out that minor toxic symptoms were more than ten times as great in those who received the Upsher Smith tablets as in those who received the other firm's tablets, and that the mortality was 49 per cent of all cases of pneumonia treated with the first, as compared with 38 per cent in all those treated with the other tablets. The Council further reports that both brands of tablets were then assayed; that the tablets of the other firm were found to be of activity stated on the label, and those of Upsher Smith to be twice the activity stated. Upsher Smith has assured the Council that any of his misbranded preparations on the market will be called in, and that in the future the greatest care will be taken to insure that the potency of these will be stated correctly. (*Jour. A. M. A.*, April 26, 1930.)

THE WEST VIRGINIA MEDICAL JOURNAL

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PRESIDENT'S PAGE

THE eyes of the doctors of West Virginia should be turned toward the forthcoming November election, certainly as far as the membership of the state legislature is concerned. The profession stands sponsor for certain proposed legislature which should be enacted into law, and the state health department needs more support from the lawmakers than it has ever received. The candidates have now been nominated, and it behooves us to discuss with them these matters of vital interest to the medical profession and to the public health. Policies are of more importance to us than are political parties, and we should support the candidates for senate and house who are favorable to our measures regardless of party label.

The physicians of each county should interview their respective candidates promptly, because these gentlemen lend a much more attentive ear as would-be representatives than as electees. Let's get busy, then, and support the men who will support us.

Walter E. West

President.

EDITORIAL

The State Legislature

Early next year the West Virginia legislature will go into its biennial session for the purpose of enacting new laws and changing old laws already on the statutes. The legislators who will do this work will be elected by popular vote in November. Right now is the time for every doctor to "sound out" the candidates in his own county and to find out just what candidates will stand by and defend the medical practice act of West Virginia. The candidates who will defend the medical practice act are the candidates who should receive the support of the medical profession regardless of the political party they are affiliated with.

Throughout the state will be found many candidates for the state legislature who were members of the legislature at the 1929 session and who are seeking reëlection. A complete record of the vote of every member of the 1929 legislature on every question pertaining to the medical profession is on file in the office of the Association in Charleston. If any member of the Association desires to know how any member of the 1929 legislature voted on any measure presented at that session, he can secure the desired information by writing to the Association headquarters, Box 1541, Charleston. It might be worth while to check up and see how your delegates voted in 1929.

Official Automobile Emblems

At the White Sulphur meeting of the Association last May the house of delegates unanimously voted to adopt the American Medical Association automobile emblem as the official emblem for the members of the West Virginia State Medical Association. Arrangements have been made for all members of the Association to purchase these emblems through the office of the state secretary or else direct from the A. M. A.

In carrying out the suggestion of the house of delegates, it was found possible to secure the A. M. A. emblem with the name of our own state association stamped thereon. An order for these special emblems was placed several weeks ago and a limited supply has already been received by the state secretary. These emblems may be purchased at two dollars each from the state secretary, Box 1541, Charleston, W. Va. Each emblem will carry a registry number and each number will be recorded with the Association and with the state police department for purposes of protection to the holder.

It might be pointed out that the special West Virginia emblem (which is furnished through the A. M. A.) will cost two dollars, whereas the A. M. A. emblem costs only one dollar and a half. The extra charge is necessary to cover the cost of placing the name of the West Virginia State Medical Association on the A. M. A. emblem. All members who desire the special West Virginia emblem should communicate with the state secretary at once, before the present supply is exhausted.

COMMUNICATIONS

A Persistent Violator

West Virginia State Medical Association,
Charleston, West Virginia.

Gentlemen:

From time to time when inquiry is received in this office concerning the question of the standing of W. B. Hite, it seems as if this man is employed from time to time to assist the physicians in charge of medical services of mining operations and other industrial enterprises.

I have to advise that the name of W. B. Hite does not appear on the list of physicians licensed to practice in West Virginia. The person to whom this statement specifically applies has been a persistent violator of the West Virginia Medical Act for years. Whenever he can be located, legal measures are at once instituted for the purpose of prosecution, but he usually departs before service can be executed.

Will you please give this item as much publicity as possible in the WEST VIRGINIA MEDICAL JOURNAL and I will personally assume the responsibility for its publication.

Yours very sincerely,
W. T. HENSHAW,
State Health Commissioner.

OBITUARY

Claude E. Grimm, M.D.

Dr. Claude E. Grimm, of St. Marys, died at the St. Joseph's Hospital, Parkersburg, on the morning of July 21, 1930, at the age of forty-four years. Death was caused by acute diverticulitis and general peritonitis. Dr. Grimm was born in St. Marys on December 28, 1886; was graduated from Jefferson Medical College in 1910, spent the next two years at the Elizabeth General Hospital in New Jersey, and from that time until his death was associated

with his father, Dr. A. S. Grimm, in the practice of medicine and surgery. Besides his father, he is survived by his widow and one son, two brothers of Pittsburgh, Pa., and one sister, Miss Nellie Grimm, of St. Marys.

Dr. Grimm was always a very active member of the West Virginia State Medical Association and rarely missed any of the state meetings. He was also a devoted member of the Academy of Medicine of Parkersburg and was always in attendance at the Academy meetings, even though they were held in Parkersburg, about twenty-five miles from his own home.

The deceased was a great worker for the community welfare of St. Marys and a consistent member of the Methodist Episcopal Church there. He was also a member of the St. Marys Golf Club. The esteem in which Dr. Grimm was held is well illustrated by the following, clipped from the *St. Marys Oracle*:

"The death of Dr. Grimm is a great loss to the city and the surrounding communities. Born and brought up among us, his genial nature and accommodating disposition easily won a way into all our hearts, and we were all proud of the distinction at which he arrived in the practice of his profession. His untimely passing away will be mourned by thousands."

In writing of the death of Dr. Grimm for the Academy of Medicine of Parkersburg, Dr. John T. Goff, secretary, said: "We, the members of the Academy of Medicine, will remember Dr. Grimm as a very useful member and one we were always glad to be associated with."

ANNOUNCEMENTS

Goiter Award Made

At the recent meeting of the American Association for the Study of Goiter, at Seattle, Washington, Dr. William F. Rienhoff, Jr., of Johns Hopkins University, Baltimore, Maryland, received the annual award of $300 for the best essay dealing with the goiter problem. Drs. O. P. Kimball, of Cleveland, Ohio, and E. P. and D. R. McCullagh, Cleveland Clinic Foundation, Cleveland, Ohio, and Robert P. Ball, of the University of Louisville, received honorable mention.

Post-Graduate Assembly

The completed program for the international assembly of the Interstate Post-graduate Medical Association of North America has just been released by Dr. Edwin Henes, Jr., executive secretary of the organization. The assembly will be held in the Municipal Auditorium at Minneapolis on October 20–24, 1930, and the program will be one of the best ever offered by the association.

Plattsburgh Physicians Hospital

The instruction committee of the Physicians' Hospital of Plattsburgh has just issued its medical and surgical year-book for 1929. The papers therein include those presented during the summer of 1929 incident to the summer course in cardio-nephritis for undergraduates in medicine, the invitation lectures, the papers of the cardiac round table, and others. The 1930 summer course closed on August 30.

Costs of Medical Care

An interesting report of the medical facilities of Shelby county, Indiana, has just been received from the Committee on the Costs of Medical Care. It was released for purposes of study and comparison. The committee plans to issue one report each month throughout the fall and winter.

COUNTY SOCIETY NEWS

Central Tri-State Society

The annual fall meeting of the Central Tri-State Medical Society will be held at the Hotel Prichard in Huntington on the afternoon and evening of September 18, it has just been announced by Dr. J. S. Klumpp, secretary. The program will open at two o'clock on the afternoon on September 18 and will close the same evening. Four scientific papers will be presented at the session and will deal with the subjects of medicine, pediatrics, diagnosis, and orthopedics.

The program will be opened by Dr. Martin H. Fischer, Eichberg professor of physiology at the University of Cincinnati Medical College. Dr. Fischer's subject, which will deal with medicine, has not yet been announced. He will be followed by Dr. Alfred Graeme Mitchel, Rachford professor of pediatrics at the University of Cincinnati Medical College. Dr. Lee Forshay, of Cincinnati, who will talk on diagnosis, and Dr. Robert Carothers, of Cincinnati, who will talk on "The Modern Treat-

ment of Fractures," will be the other two scientific essayists. Dr. Carother's paper will be accompanied by moving pictures and x-ray slides.

Dr. Klumpp has announced that the exact titles to be presented at the September 18 meeting will be released within the next few days and will be contained in a letter sent out to each member of the organization.

Wetzel County

Plans for the inauguration of a new component society in Wetzel county are already under way, and by the time this issue of the JOURNAL is mailed out the new society will probably be a reality. Interest in the formation of a Wetzel County Medical Society was recently aroused in New Martinsville, and it is hoped to get the remaining county doctors interested in the organization. There are approximately twenty practitioners in the county, and a very effective organization could be formed out of this group. It is also possible that the doctors of Tyler county will join the Wetzel county physicians in the new society.

Mason County

The quarterly meeting of the Mason County Medical Society will be held some time this month or early in October, according to plans that are now being formulated. For the first time since the society was organized the fall meeting may be held outside of Point Pleasant. It is planned to hold the gathering somewhere near the Jackson county line and to invite the Jackson county doctors to take a part in the meeting. Within the next year the Mason society hopes to join with the doctors of Jackson county in forming a larger organization.

H. A. BARBEE, Secretary.

Monongalia County

The Monongalia County Medical Society held its regular monthly meeting on August 5 in the Junior High School library at Morgantown, with an excellent attendance. Dr. Chester R. Ogden, of Clarksburg, past president of the West Virginia State Medical Association, was the principal speaker. His subject was "European Clinics," and was an interesting outline and study of the great medical centers of Continental Europe. Dr. Ogden recently returned from an extended tour of Europe.

G. R. MAXWELL, Secretary.

Kanawha County

Plans for the first fall meeting of the Kanawha Medical Society are already under way and will probably be held early in September. The Kanawha society, like a number of others throughout the state, holds no meetings during the summer months. With the summer vacation period at an end, plans for the winter meetings are being made, and an outline of coming sessions will be completed within a short time.

BOOK REVIEWS

Physical Diagnosis

The library of the West Virginia State Medical Association is in receipt of a complimentary copy of *Physical Diagnosis*, by Dr. Richard C. Cabot, professor of clinical medicine at Harvard University and former chief of the West Medical Service at the Massachusetts General Hospital. *Physical Diagnosis* is published by William Wood and Company, 156 Fifth Avenue, New York City, and retails at $5.00 net.

This new volume by Dr. Cabot is a most worthy work, with six plates and more than 275 figures. The more important new matter introduced relates to coronary disease, electrocardiography, cancer of the lung, cardiac asthma, toxic hepatitis, and encephalitis lethargica. The sections on laboratory methods of diagnosis have been revised and brought up to date.

Doctors and Specialists

Doctors and Specialists, by Dr. Morris Fishbein, described as "a medical revue with a prologue and a good many scenes," has just been released by Bobbs-Merrill, publishers, of Indianapolis. The book is dedicated to "every doctor with a sense of humor —something a doctor must have to live at all."

Dr. Fishbein, as editor of the *Journal of the American Medical Association*, has had a wonderful opportunity to study the human-interest side of the practice of medicine, and has profited greatly through this experience. His Bobbs-Merrill production is the result. It is filled with that true Fishbein philosophy, a philosophy based on satire. *Doctors and Specialists* will provide excellent entertainment for any and all persons in any way interested in the profession of medicine. The busy practitioner will find this little treatise a splendid antidote for whatever might ail him.

GENERAL NEWS

Diseases and Tumors of Bone

A meeting of approximately eight hundred physicians, to discuss the diagnosis and treatment of diseases and tumors of bone, will be held in Baltimore on September 15–17, inclusive, according to an announcement just received from Dr. Joseph C. Bloodgood of Johns Hopkins Hospital, Baltimore. The session will open at ten o'clock on the morning of September 15, and will close at nine o'clock on the evening of September 17. In his letter announcing the meeting, Dr. Bloodgood wrote as follows:

"There will be a meeting in the ballroom of Belvedere Hotel in Baltimore, Maryland, Monday, Tuesday, and Wednesday, September 15, 16, and 17, 1930, beginning Monday morning at ten o'clock and ending Wednesday evening at nine o'clock, daylight saving time. During these days there will be lantern-slide demonstrations, with four lanterns and screens, on the diagnosis and treatment of diseases and tumors of bone.

"The first day will be devoted to the fundamental and essential knowledge of the benign and malignant lesions of bone, such as osteitis fibrosa, giant-cell tumors, osteomyelitis, sarcoma, and so forth. On the second day, the subject will be the different diseases of single bones, such as the lower end of the radius, vertebræ, etc. The third day will be reserved for the presentation of rare lesions of bone difficult to diagnose. Any member of the medical profession attending this meeting may register such a case by addressing Miss Maude Walker, secretary to Dr. Bloodgood, Surgical Pathological Laboratory, Johns Hopkins Hospital, Baltimore, Md., enclosing the x-ray films or lantern slides of them (if possible the latter) and sections of tissue, if any. Any member of the medical profession interested in the diagnosis and treatment of lesions of bone is invited. On account of the size of the ballroom, the number must be limitd to 800.

"Those who wish to attend should write the Belvedere Hotel and register, requesting either the usual rates for a single or double room with and without bath, or the special rates for three or more in a room with and without bath, and the special restaurant rates for a club breakfast, luncheon, and dinner. You are advised to bring the answer received from the manager of the Belvedere Hotel with you and present it when you register. For any further details in regard to this demonstration, address your letter to Miss Maude Walker, named above.

"I am very anxious that this invitation should reach radiologists, surgeons, pathologists, and internists who are interested in the subject but have only rare opportunities to observe lesions of bone. In three sessions of two or two and one-half hours each, on three days, with four lanterns and a very remarkable and educational motion picture, the subject can be presented in an almost unforgettable way, emphasizing the essentials and fundamentals in the diagnosis and treatment of bone lesions. All cases registered for presentation on Wednesday will be sent later to Dr. Bowman C. Crowell, director of clinical research of the American College of Surgeons, who is chairman of the Bone Sarcoma Committee. You should become familiar with this registration of sarcoma of bone, if you are not, because you can register all your cases there and receive the diagnosis of a committee, and you can send for groups of bone-tumor cases which have been registered, for personal study.

"It is impossible, except in the largest clinics, for any radiologist, pathologist, surgeon or internist to become familiar with the changing clinical, x-ray and microscopic pictures of diseases and tumors of bone, as they come under observation earlier and earlier after the first injury or first symptom, and to learn how to diagnose and treat them in the best way."

Medical Officers Wanted

The United States Civil Service Commission announces open competitive examinations for positions as senior medical officer (pathology), $4,600 to $5,400 a year, and associate medical officer (pathology), $3,200 to $3,800 a year. Applications for senior and associate medical officer must be on file with the Civil Service Commission at Washington, D. C., not later than September 24, 1930. The examinations are to fill vacancies in the United States Public Health Service, and in positions requiring similar qualifications.

The entrance salaries range from $4,600 to $5,400 a year for the senior grade, and from $3,200 to $3,800 a year for the associate grade. Higher-salaried positions are filled through promotion. Competitors in the examination for senior medical officer will be rated on their education, training, and experience, and on a thesis or publications. Competitors in the examination for associate medical officer will be rated on their education, training, and experience.

Full information may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the United States Civil Service Board of Examiners at the post office or customhouse in any city.

National Examining Board Elects

At the recent annual meeting of the National Board of Medical Examiners, the following officers were elected: Waller S. Leathers, M.D., president; Everett S. Elwood, executive secretary; J. S. Rodman, M.D., medical secretary.

In addition to the officers, eight new members were elected for terms of six years each. Three of these are representatives of the Federation of State Boards of Medical Examiners in the United States. They are as follows: T. J. Crowe, M.D., secretary, Board of Medical Examiners for the State of Texas; J. Gurney Taylor, M.D., member of the Wisconsin State Board of Medical Examiners; and J. H. J. Upham, M.D., dean of the Ohio State University College of Medicine and member of the Ohio State Medical Board.

The remaining five members were elected at large. They are as follows: Charles A. Elliott, M.D., professor of medicine, Northwestern University Medical School; William DeB. MacNider, M.D., professor of pharmacology, University of North Carolina School of Medicine; Walter W. Palmer, M.D., professor of medicine, Columbia University College of Physicians and Surgeons; E. D. Plass, M.D., professor of obstetrics and gynecology, The State University of Iowa College of Medicine; and Charles R. Stockard, M.D., professor of anatomy, Cornell University Medical College.

In addition to the new members, Dr. Howard T. Karsner, professor of pathology, Western Reserve University, was elected for a second term of six years to succeed himself.

The constitution of the National Board of Medical Examiners was so amended at the annual meeting that its membership was increased from twenty-one to twenty-seven. The amendment provides that a total of fifteen memberships shall be representative and twelve elected at large. Six of the fifteen memberships are made up of the three surgeon-generals of the United States Army, Navy, and Public Health Service, and of an additional number from the medical corps of each of these services. Five memberships are made up of representatives from the state boards of medical examiners. Prior to this, the state boards have had only three members to represent them. Two of the representative memberships are from the Council on Medical Education and Hospitals of the American Medical Association, and two from the Association of American Medical Colleges. Except the memberships from the federal services, the term of office is six years and no member can have more than two consecutive terms.

The reports of the officers of the board showed an increase of approximately ten per cent in the number of candidates taking the examinations during the past year, as compared with the year previous.

The number of state boards now recognizing the National Board's certificate total forty, besides the territories of Hawaii and Porto Rico and the Canal Zone. Partial recognition is also granted the National Board's examinations by England, Scotland, Ireland, and Spain.

Examinations in Part I and II were scheduled and given in forty-one centers throughout the country; there being a total of 707 candidates registered for Part I and 337 for Part II. Examinations in Part III, the clinical and practical examination, were held in sixteen centers in June and Jdly, with approximately 280 registered candidates.

Lycoming County, Pa.

[*Editor's Note.*— The following description of a meeting of the Lycoming County Medical Society was furnished by Dr. H. M. Hall of Wheeling. The description is so well done and provides such an excellent model for all county societies that it is published herewith in full.]

The good, the usual, the well-performing are everywhere about us. The world's dutiful tasks are in the main negotiated with satisfaction. Something akin to a dead-level standardization prevails almost everywhere, in much that goes on. There is a great assemblage of actors. Few that electrify their audiences. A plethora of piano-players. The great artists would scarcely number a hundred. The country holds many county medical societies—all acceptable—but where will you go to see a forceful, vigorous, dynamic one which, in the vernacular, sweeps all before it and allows for little interference in its decisions, one way or the other? There is an answer. It is Williamsport, Lycoming County, Pennsylvania, where they make the Lycoming motors. Nothing that particular brand of machinery accomplishes has anything on the smooth running of the Lycoming Medical Society.

This society has a reputation—not only in Pennsylvania, but elsewhere—and deserves it. Not a thing in this article is meant to be flattering. It is all written in dead earnest and with the conviction that this body of men could easily be the pacemakers for the entire United States.

The secret of their outstanding qualities is not in the least difficult to define. They are all very much concerned in the operation of their organization, and they all have courage. Oh, but they have the courage! They take their society's welfare as seriously as if they were the board of directors of some big corporation.

It is a thrilling and worthwhile experience to hear them and see them. One rather fancied that keen interest, up-and-doing methods, forceful management, jealousy of reputation, and "come on and say it" had passed out of the conduction of a medical society. No, it has not. In Lycoming County it is best not to fool with the medical society. It is a power and a reality, and those bent on trouble had best look elsewhere. Well, what is the result? Proof positive for the old, time-worn assertion that where doctors merely stand together they are close to invincible. You will not find this society pleading for fair play. You will not observe this organization begging for legislative results. You will not find the main crowd endeavoring to establish a thing with one or two opposing for reasons not given.

They move *en masse*. If you can't see your way clear to help, you are not exactly an outcast; but you are not regarded as the greatest thing that ever happened. Of course, in any big crowd of men several with a craven spirit must, according to the law of averages, be present. Doubtless the Lycoming society has its share of those who would regard thirty pieces of silver as a good investment. If so, they wisely keep it to themselves. The society is one which still has rules of conduct and ethics, and to go contrary is supposed to be bad form. Perhaps all the other medical societies will, sooner or later, have to adopt this again. What does the record show as the fruits of such activity? A very practical collection system, each paying in about thirty dollars, establishing a manager (who took up the Memphis system), with an office and help. He gets twenty per cent and the collecting is done on a high business plane. The dentists have joined in this. Next, a central call station. Each contributes two dollars a month. Somebody is at that station every minute in the year. When you go for an hour or a month you arrange what you want done. That is all. They have meetings at which a section of a medical school faculty gives the program. They have an afternoon off—a week part of the year. A whole afternoon and evening off on another. They control activities of lay organizations. Their meetings take on the air of a big family gathering. They speak of their society like the owner of Gallant Fox would speak of his horse. A general practitioner is not obsolete. In fact, a number are to be found—and just as proud and full of activity as if they were cancer specialists. All in all, it is a real society—one of the kind you dreamed might happen.

These words sound sort of fulsome and extravagant. The writer means every one of them. To those doubting Thomases who think such a society "can't happen," and who must forever have palpable proof, there is only one way to substantiate such a description—go and see for yourself! Drop in unexpectedly! You will be surprised and gratified.

At a recent open meeting, when Dr. Crile and Dr. Shamberg were there and a big crowd had turned out, the president, Dr. J. F. Gordner, a big man of Dr. Rutherford's type, with blue eyes and a deep, commanding voice, arose and delivered the following address. In print it may seem a bit egotistical; it was nothing of the sort. It breathed an undying confidence in his society, his colleagues, and his town. It greeted the visitors, but intimated the idea that all that was great and good was not confined to the big cities. It is heartily commended to all overmodest, half-hearted medical communities, wherever situated. Dr. Gordner said:

"Mr. Chairman, visitors, and members of the Seventh Councillor District:

"It affords me genuine pleasure this morning, in behalf of the Lycoming County Medical Society, to extend to you our most hearty welcome. We feel particularly honored in having you with us, and we hope that your visit will be filled with both pleasure and profit, and that you will carry back with you to your various homes a fond memory of Lycoming County and the city of Williamsport.

"I ask you to remember that Lycoming County is the home of the Lycoming County Medical Society—the best organized, best attended, and with the best bulletin of any county society in the state or nation. Also, that ours is not a one-man society. We are proud of the history of medicine in Lycoming County, for among the pioneer surgeons of this county we find the names of Saylor, Connelly, Nutt, Detwiler, Youngman, Koser, Klump, Bell, and many others.

"Lycoming County is noted for its good roads and beautiful scenery. Look about you at these giant hills whose lives outnumber the memory of the human race, and may you learn from them, as we have learned, the brevity of human existence, so that within its brief compass you may crowd all the happiness possible for yourselves and your fellowman. Amid these natural beauties we labor and play and sleep and meditate. Even the president of these great United States has just paid his third visit to our county in search of recreation and rest. We who dwell in this beautiful valley find within these hills peace and contentment, and by meditation upon nature's wonders derive a satisfactory philosophy of life which serves us in every need.

"We feel sorry for you who dwell in the great cities and witness their unrest and disquiet. You who live amid the multitude and experience the killing strife of human competition; you who have tasted of the cities' pleasures and found that they palled.

"So I again welcome you to our beautiful city and county, whose shores are lapped by the waters of the quiet Susquehanna as it flows onward to the sea, carrying on its bosom the fragrance of mountain and forest and wild flowers; and I hope that you will want to come back and visit us again.

"I welcome you in the name of the Lycoming County Medical Society."

PROCEEDINGS

House of Delegates of the A. M. A.

(Concluded from the August issue.)

Action on Report of Judicial Council.—The Reference Committee on Legislation and Public Relations reported as follows on the report of the Judicial Council:

1. Coöperative Diagnostic Laboratories: The committee condemns the growing tendency of members of the medical profession becoming participating members of diagnostic laboratories owned and controlled and supervised by laymen, from which laboratories the medical participating members receive compensation based on the amount of work that the participating medical members refer to these coöperative diagnosis laboratories, and we highly approve of that report of the Judicial Council condemning such practices, under the title "Cooperative Diagnostic Laboratories."

2. Original Jurisdiction and Responsibility: We heartily approve of the section in the report of the Judicial Council entitled "Original Jurisdiction and Responsibility."

3. Proper Preparation of Charges and Appeals: We heartily approve of the general purport of this section of the report of the Judicial Council. We suggest that the following sentence be inserted after the word *followed* in the third from the last line of the last paragraph: "The technicalities of evidence as prevailed in courts of law, whether they be civil or criminal courts, should not be insisted upon." The paragraph will read as follows:

"It is, at best, unfortunate that official action contemplating the application of discipline should have to be taken, but it is essential that the honor of the profession be zealously guarded and that the integrity of our organization be fully preserved. It is just as important that no injustice be done to any individual. That these ends be served, it is of the utmost importance that any society that finds it necessary to proceed against any member or any group of members shall see to it that charges preferred are specific, that rules of evidence are duly observed, and that legal methods of procedure are carefully followed, but that the technicalites of evidence as prevailed in courts of law, whether they be civil or criminal courts, should not be insisted upon. Appeals must be made in the prescribed form, and the records submitted to appellate bodies must be accurate and complete."

4. Corporation Practice: We approve of that part of the report of the Judicial Council entitled "Corporation Practice," but we would call attention to the fact that the profession at large demands a solution of this question and would suggest that the Judicial Council report at the next meeting of the House of Delegates.

The report of the Reference Committee was adopted by the House of Delegates.

Report of Committee on Standards of Physical Fitness.—The committee appointed to consider "the advisability of amending the present standards of physical fitness of automotive operators, adopted by this association by the addition of standards of mental and moral fitness," has made a preliminary study of the subject of the resolution, which reads:

"Whereas, The Traffic Committee of the Medical Society of the District of Columbia, in a report on the standards of fitness to be required of automobile drivers, has found that many accidents are due to defects of mental and moral responsibility; and

"Whereas, Such defects in mental and moral responsibility may be determined by medical examination, as demonstrated by the examination of airplane pilots required by the Department of Commerce; therefore, be it

"*Resolved*, That the House of Delegates consider the advisability of amending the present standards of physical fitness of automotive operators, adopted by this association, by the addition of standards of mental and moral fitness to be recommended for adoption by the several states as a condition for issuing licenses to operate motor vehicles, and that this resolution be referred to a special committee for consideration and report at the 1930 meeting." (Adopted by the House of Delegates in 1929.)

The committee finds:

1. That "motor vehicle fatalities in the United States in 1929 numbered 31,000, which is 93.8 per cent of the total number of traffic fatalities. This was an increase of 10.8 per cent over 1928. Motor vehicle fatalities showed an increase from 1920 to 1929 of 147 per cent. . . . For three years past . . . the number of fatalities has been mounting at a faster rate than the number of cars." (Report of Committee on Traffic Accident Statistics, National Conference on Street and Highway Safety, 1930.)

2. That the House of Delegates in 1925 adopted the following report from the section on Ophthalmology:

"Dr. C. D. Wescott, Section on Ophthalmology, presented the report of the Committee on Physical Standards for Drivers of Motor Vehicles and a resolution providing for its adoption by the House of Delegates as follows:

" 'Every individual driving a motor vehicle, private, public, or commercial, of the self-propelled type (automotive), shall be required to present to the motor licensing board in each state a certificate from a reputable physician (the standard of such medical fitness shall be licensure to practice medicine or surgery) in which the following points are certified:

" 'Visual Standards: The applicant has vision of at least 20/50 in one eye and vision of at least 20/100 in the other eye, with or without glasses. Applicants with less vision than 20/100 in the poorer eye may, under certain conditions, be qualified by a special or county board (see below).

" 'Double vision shall disqualify.

" 'Such certificates shall be made on a regular form furnished by the motor board, and, on licensing of the applicant by the board, the applicant shall be furnished with a driving certificate that shall be at all times available for inspection.

" 'Examiners shall be recompensed by a fee paid by each applicant, the amount of such fee being determined by the motor boards in each state.

" 'The license must be renewed every year, but the medical certificate must be made anew every three years, provided the applicant makes a sworn statement each intervening year that, to the best of his or her knowledge, there has been no change in his or her physical condition so far as the certificate applies, since the time of the last examination.

" 'In each state there shall be a board of physical licensure in each county, or one for several counties, consisting of two general practitioners or surgeons and one ophthalmologist, which shall meet at stated intervals and have final decision in all cases. These boards so constituted shall be empowered (1) to examine all persons applying to them for a physical license, (2) to pass on the fitness of candidates regarding whose qualifications any individual examiner may be in doubt, and (3) may, under certain conditions, qualify candidates who lack the visual requirements specified above, *viz.*, applicants with a lower standard of vision than 20/100 in the poorer eye may be qualified by them, provided that the vision in the best eye is at least 20/30 with or without the aid of glasses, and the field of vision is normal, that hearing is efficient and that the applicant is fully capacitated in all other respects physically, and alert mentally. In such cases applicants with one eye partially or wholly blind, or even entirely absent, may be qualified.

" 'These boards shall be appointed by the governor and shall be recompensed either by a fee paid by the applicants who may appear before them, or they shall be salaried officers directly connected with the department in each state controlling the granting of motor licenses.

" 'CONRAD BERENS, JR.
WILLIAM C. FINNOFF.
HARRY S. GRADLE.
WILLIAM CAMPBELL POSEY, Chairman.'

"Whereas, The report of the Committee on Physical Standards for Drivers of Motor Vehicles and the Section on Ophthalmology, signed by Conrad Berens, William C. Finnoff, Harry S. Gradle, and William Campbell Posey, has been unanimously adopted by the section and by the Section on Preventive and Industrial Medicine and Public Health; therefore, be it

"*Resolved*, That the House of Delegates endorse the said report on Physical Standards for Drivers of Motor Vehicles."

Dr. Wescott stated that: The Section on Preventive and Industrial Medicine and Public Health added to our recommendations, so far as vision was concerned, these three points: "The applicants shall have no disqualifying defects to either legs or arms. All applicants must be able to hear low spoken voice at five feet. The mentality of the applicant must be adequate and the heart's action reasonably healthy."

Dr. Wescott moved the adoption of the resolution. This motion was seconded by Dr. George F. Keiper, Indiana, and carried.

3. That, in 1929, "ten states and the District of Columbia have mandatory examinations of drivers for operators' licenses. Seven states require drivers' licenses but not mandatory examinations. Apparently, thirty-one states require no examination of any type." (Report of Traffic Committee, Medical Society of the District of Columba, 1929.)

4. That, according to available statistics, defects of limbs, sight, and hearing in the driver play a part in the production of automobile fatalities, but that causes in the realm of behavior play a highly important part.

5. That there do not appear to be available, at this time, any practical standards of examination by which these potential mental and moral hazards may be revealed. The methods employed by the Department of Commerce for testing airplane pilots are too elaborate for adoption by state traffic departments.

6. That the physical standards recommended by this association in 1925 have been ignored by the states in the formulation of their traffic regulations where any method of licensing drivers has been adopted.

In view of the steadily mounting death rate from motor vehicle accidents, it is recommended: (*a*) That this association use its influence in the largest possible way, by direct agitation of the subject and by coöperation with such organizations as the National Safety Council, the National Parent-Teachers Association, and the National Education Association, to secure the adoption by all the states of regulations requiring the licensing of motor vehicle operators on the basis of examination, such examination being designed to reveal the applicant's physical and mental capacity to operate such a vehicle safely.

(*b*) That this or a similar committee be authorized to study the subject further in order to formulate a practicable set of standards of physical, mental and moral fitness, for recommendation by this association to the several states as the basis of their required examination of prospective motor vehicle operators; the results of the committee's study to be submitted to the House of Delegates at a subsequent meeting.

Respectfully submitted,

GRANT C. MADILL, Chairman.
JOHN M. DODSON.
G. HENRY MUNDT.
HENRY C. MACATEE.

The report of this committee was adopted by the House of Delegates.

Report of Committee on Military Affairs and National Defense.—Gentlemen: We, your Committee on Military Affairs and National Defense, beg leave to present our first annual report, as follows:

Our committee has been created since the last annual session of the American Medical Association. It has, therefore, not had an opportunity to organize for the purpose for which it was created and to lay out a course of procedure of anything like a promising sort. There has been much correspondence, however, between the members of the committee and, as well, the surgeon generals of the Army, the Navy, and the United States Public Health Service, and there are one or two matters that appear to us to be clear at this time, to which we may properly call attention.

This committee was created in response to a resolution providing for such a committee for the purpose of receiving "all matters pertaining to national defense and military preparedness." There has been nothing referred to the committee officially, but it is our opinion that we have a certain degree of initiative; hence the recommendations we are about to make.

It will be recalled by many that when the great emergency came upon us in 1916 we were, as a nation, wholly and totally unprepared for war. The fact that we attained to a reasonable degree of preparedness within the astonishingly short period of a year is beside the point. The fact remains that we were not ready, and had it not been for the further fact that the enemy was deadlocked with other forces, the story would have been much sadder and certainly very different. If any group of our citizenship was in any way partially prepared and in the process of being prepared, it was the medical

profession; yet who among those of us that participated in that supreme effort does not shudder when he thinks of the chaotic conditions that obtained? One of the purposes of our committee will be eventually to bring to the attention of the medical profession of this country, in the most impressive and persuasive way possible, a true picture of the state of affairs existing at that time, together with recommendations which, the committee hopes, if carried out, will help to prevent a repetition of the confusion, uncertainty, and lost motion of those days. That we weathered the storm then is incident to the fact that great minds were in charge. Had those minds been applied to the problem earlier than they were, and had their plans received sufficient support, certainly conditions would have been improved and the very necessary medical and surgical service would have been more immediately available to our combatant and other governmental forces.

It is appreciated by our committee that, since the days of the World War, much has been accomplished by way of preparedness, including better and more definite laws, particularly as pertain to national defense proper, and a better and more complete organization of the armed and public health forces of the country. Even so, unless the medical profession prepares to take its place in the scheme of things, much of success will be lacking until much precious time has elapsed following the onset of a great national emergency.

In the meantime, our committee recommends that the situation, as briefly outlined here, be called to the attention of the profession at large, and that each of our constituent state associations be requested to appoint a state committee on "Military Affairs and National Defense," with much the same purposes as relate to the states as the American Medical Association committee has for its existence, all committees to work together in developing national medical preparedness.

Respectfully submitted,

HOLMAN TAYLOR, Chairman.
F. B. LUND,
E. A. MEYERDING,
F. K. BOLAND.

The House of Delegates adopted the report of this committee.

Clinical Thermometers.—The following resolution, offered by Dr. George W. Reese, Pennsylvania, was adopted on recommendation of the Reference Committee on Hygiene and Public Health:

"Whereas, Investigations made of numerous clinical thermometers offered for sale in the open market indicate that these devices are not always correctly standardized, even though they carry a certificate indicating that they have been checked with a standard instrument secured from the Bureau of Standards in Washington, D. C., and

"Whereas, Correct reading of the temperature of the patient is of the utmost importance as a clinical sign, and that a decision of the greatest seriousness concerning the health and even the life of the patient may depend on accurate recording of the temperature of the patient; therefore, be it

"*Resolved*, That this House of Delegates, through the Board of Trustees, request the Bureau of Standards to formulate a method whereby thermometers alleged to conform with a standard set by the Bureau of Standards be checked as to such conformation, and that suitable penalties be provided by law for violation of such standards by manufacturers."

Proposed Amendment to the Constitution.—Dr. D. E. Sullivan, New Hampshire, proposed amendment of Section 2, Article 5, of the Constitution, so as to provide that delegates representing the Veterans' Bureau shall be admitted as members of the House of Delegates. This proposed amendment to the Constitution lies over for action at the next annual session.

Radio Broadcasting.—The following resolution, offered by Dr. Charles E. Mumiston, Illinois, was adopted by the House of Delegates on recommendation of the Reference Committee on Legislation and Public Relations:

"Whereas, Licenses issued by the Federal Radio Commission to broadcast have frequently been used as authority for disseminating false, misleading, pernicious, and even obscene statements concerning matters of health, not for the benefit of the public but solely for the promotion of the selfish interests of the proprietor of the broadcasting station;

"*Resolved*, That the House of Delegates of the American Medical Association, recognizing the legal prohibition on the censorship of radio programs, urges on the Federal Radio Commission the necessity for extreme care in the character and qualifications of persons and corporations desiring to broadcast medical programs and a liberal construction in favor of the public of the law authorizing the revocation of licenses that are against public interest."

Psychiatric Service in Criminal Courts.—The

following resolutions, offered by Dr. T. B. Throckmorton, delegate from the Section on Nervous and Mental Diseases, were adopted:

"*Resolved*, That the Section on Nervous and Mental Diseases hereby declares its adherence to the principles stated in the Report of the Committee on Psychiatric Jurisprudence, Section on Criminal Law and Criminology, American Bar Association, and approved by that association at its meeting held in Memphis, Tenn., October 24, 1929, namely:

"'1. That there be available to every criminal and juvenile court a psychiatric service to assist the court in the disposition of offenders.

"'2. That no criminal be sentenced for any felony in any case in which the judge has any discretion as to the sentence until there be filed, as a part of the record, a psychiatric report.

"'3. That there be a psychiatric service available to every penal and correctional institution.

"'4. That there be a psychiatric report on every prisoner convicted of a felony before he is released.

"'5. That there be established in each state a complete system of administrative transfer and parole, and that there be no decision for or against any parole or any transfer from one institution to another without a psychiatric report.'

"*Resolved, further*, That the section recommends that the House of Delegates of the American Medical Association adopt the principles stated above and request the Board of Trustees to take such action as may be necessary to bring about the coöperation of state and county medical associations with corresponding state and local bar associations in securing, as far as possible, the adoption of these principles in practice."

Mental Hygiene.—The following resolution, offered by Dr. Tom B. Throckmorton, delegate from the Section on Nervous and Mental Diseases, was adopted:

"Whereas, The problem of the mental disorders and defectives and the mental health of the country constitute one of the most serious situations with which scientific medicine is at this time concerned, and

"Whereas, The hospitalization and care of an increasing number of mental disorders and defectives constitute one of the most difficult economic situations affecting the medical profession, and,

"Whereas, There is in the organization of the American Medical Association no regularly constituted committee or body especially concerned with this problem; therefore, be it

"*Resolved*, By the Section on Nervous and Mental Diseases of the American Medical Association, that it recommend to the House of Delegates that the Board of Trustees of the American Medical Association be authorized to appoint a special committee of five Fellows of the Association especially interested in these problems with a view to an investigation of the situation and to making a report to the Board of Trustees on the manner in which the Association can be of service in the solution of these problems."

Investigation of Hospitals for Mental Patients.—The delegate from the Section on Nervous and Mental Diseases submitted the following resolution, which was adopted:

"Whereas, There has been no fixed policy of the American Medical Association toward the handling of the institutional public in the insane hospitals of the country; and,

"Whereas, There is a growing consciousness of the need for a better understanding of the problems of these institutions, especially as regards their medical personnel; therefore, be it

"*Resolved*, That the Council on Medical Education and Hospitals be requested to make a thorough investigation of all hospitals caring for mental patients within the next one or two years, whereby a more accurate knowledge of the situation may be obtained and the need of further developments in the field be pointed out."

Election of Officers.—The following officers and members of councils were elected by the House of Delegates:

President-elect—E. Starr Judd, Rochester, Minn.

Vice-President—Louis J. Hirschman, Detroit.

Secretary—Olin West, Chicago.

Treasurer—Austin A. Hayden, Chicago.

Speaker of the House of Delegates—F. C. Warnshuis, Grand Rapids, Mich.

Vice-Speaker of the House of Delegates—Albert E. Bulson, Fort Wayne, Ind.

Trustee—Thomas S. Cullen, Baltimore.

Trustee—Joseph A. Pettit, Portland, Ore.

Trustee—J. H. J. Upham, Columbus, Ohio.

Member of Judicial Council—George Edward Follansbee, Cleveland, Ohio.

Member of Council on Medical Education and Hospitals—Charles E. Humiston, Chicago.

Member of Council on Scientific Assembly—Frank Smithies, Chicago.

Philadelphia was selected as the next place of meeting.

MONTHLY MORBIDITY REPORT

BY COUNTIES

JULY, 1930	Chickenpox	Diphtheria	German Measles	Influenza	Measles	Ophthalmia Neonatorum	Poliomyelitis	Scarlet Fever	Smallpox	Tuberculosis, All Forms	Typhoid Fever	Whooping Cough
Barbour	1	----	----	----	----	----	----	----	----	----	----	12
Berkeley	1	1	----	----	----	----	----	----	----	----	1	----
Boone	----	----	----	----	2	----	----	----	----	----	1	7
Braxton	----	----	----	----	----	----	----	1	----	----	----	----
Brooke	----	1	----	----	1	----	----	----	----	----	----	----
Cabell	----	----	----	----	----	----	----	2	----	----	3	
Calhoun	----	----	----	----	----	----	----	----	----	----	1	----
Clay	----	----	----	----	----	1	----	----	----	----	----	----
Doddridge	----	----	----	13	----	----	----	----	2	----	1	3
Fayette	----	----	----	----	6	----	----	2	4	1	8	
Gilmer	----	----	----	----	----	----	----	1	----	----	----	
Grant	----	----	----	10	----	----	----	----	----	----	2	3
Greenbrier	----	----	----	----	----	----	----	----	----	----	1	
Hampshire	----	----	----	----	----	----	----	----	----	----	4	
Hancock	1	1	4	----	1	----	----	2	----	----	----	
Hardy	----	----	----	----	----	----	----	2	----	----	1	
Harrison	1	----	----	----	5	----	----	6	----	1	1	56
Kanawha	----	2	1	----	1	----	----	3	----	6	11	37
Lewis	4	2	----	----	----	----	----	----	----	----	2	2
Lincoln	----	----	----	----	23	----	----	3	4	1	3	4
Logan	----	2	----	----	1	----	----	2	1	----	15	
Marion	----	2	----	----	----	----	----	25	----	14	1	
Marshall	----	----	----	----	----	----	----	1	----	1	----	
Mason	----	----	----	----	1	----	----	----	2	----	----	6
Mercer	----	----	----	2	----	----	----	1	----	----	3	
Mineral	7	----	----	2	6	----	----	1	----	10	2	24
Mingo	----	2	----	----	----	----	----	----	2	----	----	----
Monongalia	2	1	----	----	1	----	----	1	1	----	10	
Monroe	----	----	----	----	21	----	----	----	----	----	----	
Nicholas	----	----	----	----	----	----	----	----	----	----	6	
Ohio	5	1	1	----	4	1	1	4	----	12	3	15
Pendleton	----	1	----	----	----	----	----	----	----	----	----	----
Pleasants	----	----	----	----	3	----	----	----	1	----	----	
Pocahontas	----	----	----	----	----	----	----	1	----	----	2	
Preston	----	1	----	----	----	----	----	1	----	----	1	
Raleigh	----	----	1	----	1	----	1	----	1	5	8	
Randolph	----	----	----	----	----	----	----	1	----	----	----	1
Ritchie	----	----	----	----	5	----	----	----	----	----	----	----
Tucker	----	----	----	----	----	----	----	----	----	----	1	
Wayne	----	----	----	----	----	----	----	----	2	----	3	
Wetzel	----	----	----	----	----	----	----	----	----	----	1	
Wirt	3	----	----	----	----	----	----	----	----	----	----	
Wood	----	----	----	----	3	----	----	2	9	4	----	4
Wyoming	----	----	----	9	----	----	----	1	----	----	----	----
TOTALS	25	17	7	36	85	2	2	63	29	55	96	174

NOTE: In addition to the above, one case of hookworm disease was reported from Cabell county, and one case of cerebral spinal meningitis from Kanawha county.

The West Virginia Medical Journal

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JAMES R. BLOSS, *Editor-in-Chief* - - - - - - - - Huntington

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THE SURGICAL TREATMENT OF PULMONARY TUBERCULOSIS *

By CARL A. HEDBLOM, M.D.
Chicago, Ill.

The basis of the modern sanatorium treatment of pulmonary tuberculosis is rest in bed, fresh air, sunshine, and an abundance of good food. By such treatment, especially if begun early, the progress of the disease is arrested in the majority of cases and improvement is prompt and progressive. But some patients, treated from the earliest onset of symptoms, fail to improve, or lose ground progressively. In a considerable proportion the diagnosis is not made until after the disease has become extensive and abscess cavities have already formed. Some develop complications, such as hemorrhage and empyema. For such cases pulmonary compression offers the best prospect of improvement, and, in a large proportion, the only hope of a cure. The object of all forms of surgical treatment is to collapse and compress the diseased lung in whole or in part, and to obliterate secondary empyema.

The methods by which a complete pulmonary collapse may be achieved are artificial pneumothorax and extrapleural thoracoplasty. A partial collapse is obtained by phrenicoexeresis and by pneumolysis. These methods differ as to indications, but are identical as to principle involved.

The fundamental principles upon which pulmonary collapse is based may be set forth as follows:

First: Rest of the diseased lung. In the great majority of cases this is by far the most important end obtained. When a patient with an active tuberculosis is kept in bed, at absolute rest, a minimum of oxygen is required and breathing is therefore slower and shallower, but the diseased lung is not at rest. It is kept in constant activity, expanding and contracting in volume with each respiratory cycle, say, eighteen times a minute or one thousand times an hour. The fluctuating intrapulmonary pressure incident to the change of volume of the pleural cavity exerts a pumplike action on the lymph and blood stream, accelerating their flow, washing the toxic products in the tuberculous process into the general circulation. It is these poisonous products which keep up the fever, cause the loss of appetite and weight, night sweats, and other symptoms. The constant movement of the lung also tends to spread the tuberculosis bacilli through the blood vessels and lymphatics. Increased cough, incident thereto, fatigues the patient and may spread the disease into uninvolved portions of the lung. In proportion as the lung is put at rest, these harmful effects of respiration are reduced. Complete collapse means practically complete rest of the lung.

Second: Pulmonary collapse makes possible complete scar-tissue shrinkage of the lung. When a tuberculous lesion heals, it does so by scar-tissue formation, similar to that of a burn or wound, but under normal conditions this scar-tissue shrinkage of the lung is limited by the unyielding nature of

* Oration on Surgery, presented at the meeting of the West Virginia State Medical Association, White Sulphur Springs, May 20, 1930.

the chest wall and of the mediastinum. The sunken supra- and infra-clavicular fossæ, the narrowing of the intercostal spaces, the increased downward slant of the ribs and the shifting of the mediastinal structure toward the affected side, so often observed in chronic fibroid phthisis, constitute evidence of the effort of the lung to contract, and is most convincing proof of the need of mobilization of the lungs and chest walls, in order that the scar-tissue contraction may be complete, thereby more completely encapsulating the tuberculous lesions. Not infrequently a complete dextrocardia develops which may produce mechanical circulatory embarrassment, constituting in itself an indication for surgical treatment.

Third: Pulmonary collapse stimulates increased fibrous tissue formation in the diseased lung. It has been observed experimentally, in animals, that if a normal lung is kept in a state of collapse for a long period, a generalized fibrosis results. In chronic empyema, and after prolonged artificial pneumothorax collapse, a similar generalized fibrosis has often been observed. Following thoracoplasty collapse of a bronchiectatic lung, I have, in three instances, observed a similar condition. When one reflects that it is only by fibrous tissue formation that a tuberculous lesion is arrested, the possible salutary effects of a pulmonary collapse in case of an active spreading lesion becomes easily apparent.

Fourth: A tuberculous pulmonary cavity of any size may be obliterated only by an approximation of its walls secondary to lung collapse. Tuberculous cavities often attain considerable size. They usually become secondarily infected. When this occurs, the absorption of pyogenic toxic products is added to those due to the tuberculous infection. This absorption is increased by the stagnation of the pus so likely to occur in these cavities. The harassing cough incident to incomplete evacuation fatigues the patient and tends to spread the infection to other portions of the bronchial tract. Such cavities can empty and heal only following the collapse of their walls with the involved portion of the lung.

Fifth: Pulmonary collapse is the most effective method of arresting and preventing recurrence of pulmonary hemorrhage. Profuse hemorrhage that is not controlled by absolute rest and suitable medication demands pulmonary collapse. If the bleeding is from an eroded vessel in the wall of the cavity, as is usually the case, the pulmonary collapse or compression serves the double purpose of arresting the hemorrhage and collapsing the cavity.

Sixth: Healing of the major pulmonary lesion by compression indirectly promotes healing of secondary lesions elsewhere. Tuberculosis often affects both lungs, and may involve almost any other organ or tissue. If the lesion in the other lung or other organs is mild and not progressive, the arrest of such secondary lesion is often observed after the more extensively diseased lung is collapsed. I have observed cases in which a mild tuberculous laryngitis has entirely cleared up, and other cases in which all clinical evidence of a small cavity of the opposite lung, or a mild grade of enteritis, has entirely disappeared following thoracoplasty. Animal experimentation supports the view that removing a major tuberculous lesion influences favorably the healing of secondary lesions.

Seventh: Pulmonary collapse reduces the menace of tuberculosis carriers. Many patients with chronic pulmonary tuberculosis have so far overcome their infection that they are in fair general health. They may show but little evidence of infection, but continue to have tuberculous bacilli in the sputum. Such patients are a menace to society, just as much as a typhoid bacillus carrier, leaving out of consideration the probability that sooner or later they will develop an active lesion.

The methods of surgical collapse are extrapleural thoracoplasty, phrenico-exeresis, and pneumolysis. Inasmuch as phrenico-exeresis and pneumolysis result in only a limited amount of collapse, these methods may be considered as auxiliary to thoracoplasty. Artificial pneumothorax collapse is by common consent classed as a part of medical treatment, and its discussion, therefore, lies beyond the limits of this paper. Inasmuch, however, as the principles involved are identical with those of surgical collapse, and because the indications are so generally considered to be the same, it may be in order to discuss briefly the relative indications of artificial pneumothorax and thoracoplasty.

The general assumption seems to be that if pulmonary collapse is indicated the method of choice is always artificial pneumothorax; but only in case lesions prevent artificial pneumothorax collapse is thoracoplasty to be considered.

This assumption seems to be based on the fact that artificial pneumothorax is safer, more complete, and conservative, since there is a prospect of ultimate restoration of the function of the lungs. It also allows for reëxpansion in case the collapse is not well tolerated. In short, pneumothorax is considered the treatment of choice; thoracoplasty that of neces-

sity among those cases in which adhesions prevent adequate pneumothorax collapse.

This doctrine seems to me far too sweeping. A more fundamental conception is that which takes into consideration the nature of the pathological process. Pulmonary tuberculosis, in which lung collapse of any kind is to be considered, may be subdivided into the active caseating type, the chronic proliferating type, and a third mixed group. In the first, pleuritic adhesions are less common. The patient is a relatively poor surgical risk, and there is always the question as to the fate of the better lung. In such cases pneumothorax collapse or phrenic nerve resection are the only methods to be considered. In cases of the chronic fibroid type, on the other hand, the opposite lung has proven itself by the test of time to be relatively intact, and the patient is usually a good surgical risk. Thoracoplasty, in my opinion, is then the treatment of choice, irrespective of whether or not pneumothorax collapse is possible. In such cases the prospects of reëxpansion of the lungs are *nil*. The risk of ultimate secondary infection of a persistent pneumothorax cavity is considerable, and the hazard of a thoracoplasty is relatively small. Under such circumstances, thoracoplasty, in my opinion, is the treatment of choice. Tersely stated, artificial pneumothorax or phrenic nerve resection are the methods of choice at the one extreme, representing the exudative type of lesion; phrenic nerve resection and thoracoplasty at the other extreme, of the chronic fibroid unilateral lesion; but in the larger group of cases between these extremes, thoracoplasty is to be advised only after artificial pneumothorax or phrenic nerve resection have been tried and found wanting.

The indication for a two- or three-stage extrapleural thoracoplasty, with the above reservations, may be enumerated under the following headings:

1. Chronic unilateral fibroid phthisis.
2. Adhesions preventing artificial pneumothorax of the diseased portion of the lung, not sufficiently collapsed by phrenic nerve resection.
3. Persistently recurring sterile effusion.
4. Fixation of the lung in a collapsed position, preventing reëxpansion after pneumothorax collapse.
5. Infected tuberculous empyema.
6. Excessive displacement of the mediastinal structures, after healing of the tuberculous lesion.
7. Severe or recurrent hemorrhage, in case adhesions prevent artificial pneumothorax.

Relative Indication for Multiple-Stage Thoracoplasty.—By multiple-stage thoracoplasty is meant operative collapse divided into as many stages as necessary, and with as much time between the various sittings as the patient's condition may demand.

It is agreed by all that the proper choice of patients is most important. There are many pitfalls which may lead even the most wary to grief. Chronicity, fibroid type of unilateral lesion, the relatively good condition of the patient are emphasized as the prerequisites for reasonably good results. But such stringent indications, absolutely necessary as they are for a one- or two-stage operation, leave a large group of patients in which operation is indicated in principle, since pulmonary compression is desirable but pneumothorax collapse is impossible on account of adhesions, and phrenic nerve resection alone is insufficient. For such cases the multiple-stage operation offers a fair prospect of marked improvement, if not of a cure. Such multiple-stage operations may be limited to a posterior resection, or, if necessary, may include a complete costectomy of the anterolateral segments after the posterior thoracoplasty has been completed. In cases of tuberculous empyema it usually includes a resection of the parietal pleura over a residual empyema cavity.

Among the types of cases in which such a procedure may be indicated may be mentioned the following:

1. Patients with mixed fibrous and exudative adhesions.
2. Patients with moderately extensive healed, or localized, quiescent lesions in the opposite lung.
3. Extrathoracic tuberculosis of mild grade, or non-tuberculous disease.
4. Patients with symptoms of recurrence following the posterior, extrapleural thoracoplasty, symptoms being referable to the incompletely collapsed lung.
5. Childhood and advanced age when operation is otherwise indicated.

Contraindications. — The contraindications to thoracoplasty of any type may be stated categorically as follows:

1. Rapidly progressing unilateral disease.
2. Active progressive tuberculosis in the opposite lung.
3. Active or extensive extrapulmonary tuberculosis.
4. Conditions contraindicating any major surgical procedure.

The Essentials of Operating Technique.—The most important features of the operative procedure seem to me to be as follows:

1. Rigid asepsis.

2. Efficient regional anesthesia, with or without ethylene gas anesthesia.

3. Resection of the first, to and including the eleventh, rib, flush with the transverse process.

4. Resection of sufficient length of rib to secure an adequate collapse.

5. The number of stages, and the intervals between them, should be graded according to the condition of the individual patient.

6. A secondary anterolateral costectomy should be performed if necessary for an efficient collapse.

THE PREVENTION OF PUERPERAL INFECTION *

By THOMAS W. NALE, M.D.
Edwight, W. Va.

The mortality and morbidity from puerperal infections are alarmingly high, and our present-day treatment of these conditions is very disappointing; so it behooves every physician to do all in his power to prevent puerperal infections. I am not offering a panacea, but only hope to bring to your minds several common-sense principles that are not carefully enough observed in the practice of obstetrics.

It is a regrettable fact that deaths due to puerperal infections are not on a decrease. Six or seven women out of every thousand confined die from causes either directly or indirectly related to pregnancy, labor, or the puerperium, and more than forty per cent, or two-fifths, of the maternal deaths are due to infections.

If the maternal mortality from puerperal septicemia is this high, there must be many more infections resulting in death which are not reported as such. There also must be many infections which do not terminate fatally.

The prevention of puerperal infection starts with proper prenatal care. In order that the expectant mother will have a resistance which is at its maximum, it is important that she lead a hygienic life. Proper food with rest and exercise in sufficient quantities will aid materially. Periodic examinations of the blood-pressure and urine will often let us know in advance the approach of a toxemic state which presents a lowered resistance at the time of delivery if not given the proper attention. A careful pelvic measurement will often lead the physician to anticipate the type of labor the patient will probably have. A pelvic examination early in pregnancy aids materially, because at that time evidences of pelvic pathology can often be ascertained.

Although many authorities claim that puerperal infections are rarely autogenous in origin, I feel that it is very important to eliminate foci of infection. This is particularly true in the teeth, tonsils, and cervix. Foci of infection are important factors in the production of the toxemias of pregnancy. As pregnancy is not a contraindication to dental extractions, infected teeth can and should be removed when found. Tonsils presenting evidences of gross infection and in patients who give a history of repeated throat infections are much better removed.

CHART NO. I.

MATERNAL DEATHS PER 1,000 LIVE BIRTHS
(U. S. Birth Registration Area.)

	All Puerperal Causes	*Puerperal Septicemia*	*Other Puerperal Causes*
1927	6.5	2.5	4.[illegible]
1926	6.6	2.4	4.1
1925	6.5	2.4	4.[illegible]
1924	6.6	2.4	4.1
1923	6.7	2.5	4.1
1922	6.6	2.4	4.2
1921	6.8	2.7	4.1
1920	8.0	2.7	5.[illegible]
1919	7.4	2.5	4.[illegible]
1918	9.2	2.5	6.[illegible]
1917	6.6	2.7	3.[illegible]
1916	6.2	2.5	3.[illegible]
1915	6.1	2.4	3.[illegible]
1900	5.2	2.3	3.[illegible]

CHART NO. II.

MATERNAL DEATHS IN WEST VIRGINIA DUE TO CONDITIONS INCIDENT TO PREGNANCY, PER 1,000 LIVE BIRTHS

	All Puerperal Causes	*Puerperal Septicemia*	*Other Puerperal Causes*
1928	5.2	1.8	3.4
1927	5.4	1.8	3.[illegible]
1926	6.8	2.4	4.4
1925	5.5	2.0	3.[illegible]
1924	5.3	1.6	3.[illegible]

Cervical erosions are very common, and a cervical erosion is a hotbed of bacterial growth. The streptococcus, the most serious offender in puerperal infections, is to be found in many of these. I wish to commend the gynecologist who routinely cauterizes the cervical erosion. Cauterization of the cervix is not a procedure requiring an anesthestic. With care, erosions can readily be cauterized in the office. Dr. Harold A. Miller, of Pittsburgh, has found it a safe procedure to cauterize cervical erosions up to the twenty-sixth week of pregnancy. He has found that he could culture infectious organisms from these erosions before cauterization, but was unable to do so after the erosion was healed. He has found that ten per cent of the erosions contain streptococci and two per cent of these are hemolytic. Consider

* Presented before the West Virginia State Medical Association at White Sulphur Springs on May 21, 1930.

ing the fact that with almost every labor there is some laceration to the cervix, is it not important that an endeavor be made to have the cervix as free from bacterial growth as possible?

Intercourse should be discouraged during the latter months of pregnancy; not only because of the danger of producing a premature labor, but also the danger of carrying foreign bacteria into the cervix. If patients are questioned in regard to this, it is surprising the number who have indulged in intercourse a short while before they start into labor. The patient should be instructed not to take tub baths during the last month of pregnancy, as it is impossible for the female to take a tub bath without some of the bath water entering the vagina. Vaginal examinations should not be made during the last month of pregnancy unless strict asepsis is observed.

Breast infections are not infrequent during the puerperium. These rarely result fatally, but are very painful and troublesome to the patient. Breast abscesses appearing without there first being fissured nipple is the exception instead of the rule. As a preventive measure it has been found that daily scrubbing the nipples with a hand brush will toughen the nipples so that they are very unlikely to fissure. Inverted nipples should be corrected when possible. During the puerperium, it is important that the patient be as cleanly as possible in the care of the nipples. The use of boric acid or hychlorite solution before and after nursing will help keep the nipples free from bacteria.

Infections of the urinary tract are not uncommon with pregnancy. Many of the abdominal aches and pains are due to renal stasis brought about by either a pressure obstruction or a torsion obstruction of one of the ureters. Often, having the patient rest in bed with the foot elevated will promptly give relief. These should be treated, if necessary, by ureteral catheterization and drainage. Renal stasis presents an ideal field for renal infection. Kidney infections can very readily be a factor in producing a serious infection during the puerperium.

Labor should be carried out in such a manner as to not exhaust the patient. This can be brought about by the liberal use of morphine or the institution of the "Gwathmey" technique. Unfortunately, it is the habit of every grandmother and of many of our nurses to encourage the patient to pull with every pain long before it is warranted. A patient can very easily wear herself out by bearing down before the cervix is dilated. Bearing down before dilatation is complete is of no value, and it only exhausts the patient. At time of delivery every patient should have an anesthetic of some kind. A properly administered anesthetic will minimize the shock resulting from labor. In hospital practice, where gas anesthesia is available, it affords an excellent means of saving the patient a lot of unnecessary pain toward the end of the second stage. In the home it is not difficult to use either ether or chloroform as an analgesic.

During the course of labor the patient should be examined as infrequently as possible. When examination is necessary, rectal examinations should be made instead of vaginal. Personally, I prefer to make rectal examinations; first, because at least my conscience is clear, for I feel that I am not carrying infected material into the cervix; and, second, it is so much more convenient, because it is not necessary to use either a sterile glove or to prepare the patient. Dr. R. R. LaVake and many others claim that rectal examinations reduce morbidity during the puerperium.

Pituitrin is to be condemned because of its injudicious use. Its damage to the infant is sufficient to condemn it. When used indiscriminately, pituitrin produces undue trauma to the cervix and birth canal. Traumatized tissues encourage infection and hemorrhage reduces a patient's resistance. Is is almost impossible to regulate its dosage. Two or three minims in one individual may only slightly increase the intensity of uterine contractions, while in another the same amount will produce violent contractions which would be bound to severely lacerate the undilated cervix, if not rupture the uterus. Pituitrin should not be used until after the completion of the third stage of labor.

In the conduct of labor the physician must remember the importance of asepsis. It is practically impossible for the physician in many communities to have sterile linens for use at delivery, but there is always an opportunity to sterilize instruments and gloves. There is also an opportunity to prepare the patient locally with some of the antiseptics we now have. If there is no opportunity to properly take care of these procedures, let nature do her part; she will deliver ninety-five per cent of the patients while the physician stands by.

It is very important that the physician be cautious when delivering a patient, if he is suffering from any of the infections of the respiratory tract. Dr. Richard Armstrong reported three epidemics of puerperal infection at St. Bartholomew's Hospital,

which he considered "air-born" infection. Dr. DeLee reported a small epidemic which resulted from an interne with a streptococcal nasal discharge. There were five mothers and several babies infected. One mother and baby died. When the interne was transferred from the service, the epidemic ceased. When suffering from the common "cold" the use of a mask, and being very careful not to contaminate the hands, will help eliminate the possibility of infecting the patient.

In the last few years there has been too much of an endeavor to shorten labor. There are physicians of repute who evidently consider all labors pathological. Often enough cases are pathological, but not often enough to warrant routine versions and extractions or routine forceps. Such operations can not be performed without producing undue trauma to the tissues; traumatized tissues present an ideal field for bacterial growth. It must be remembered that each time we attempt an obstetrical operation we are not working in a surgically clean field, but in a contaminated field. It is impossible to sterilize to any great degree the tissues surrounding the vagina, the vaginal mucosa, or the cervix. Physicians must be more conservative in obstetrical operations. A more thorough understanding of the normal labor will help a lot. In obstetrics, often enough we are called upon to help nature; but I am afraid that too often we run counter to nature in performing operations which are not necessary. We must remember that ninety-five per cent of all cases will terminate spontaneously, and that even sixty to eighty per cent of cases of contracted pelves will terminate spontaneously. Figures from Johns Hopkins Hospital, based on 7,500 cases, show 94.6 per cent of cases normal or vertex presentations, compared with 0.3 per cent face, 3.9 per cent breech, and 0.94 per cent transverse.

Let every physician do all in his power not to carry foreign bacteria into the birth canal. Very often the patient has developed an immunity to the organisms already there, but her resistance to foreign bacteria may be very low. The less it is necessary to interfere with the progress of labor, the less we examine patients vaginally, the less likelihood there is of contaminating the patient with foreign bacteria. A. R. Hamblin reported a study of 984 deaths in the puerperal state by the members of the Massachusetts Department of Public Health. It was found that puerperal infection was the cause of 221 or 22 per cent of the 984 maternal deaths. Of the 221 deaths due to puerperal infection, 59 per cent followed operative deliveries and 40 per cent of the operative deliveries was by cesarean section. Dr. C. J. Calvert reported all the maternal deaths in Wisconsin for 1927 and 1928. There were 700 maternal deaths, and of these 632 deaths were recorded as puerperal. Puerperal sepsis caused one-third of the 632 deaths. Sixty per cent of all the deliveries was by operative procedures. Thirteen per cent of all the mothers who died following a delivery died following cesarean section, or 27 per cent of all operative deliveries was by cesarean section. Dr. Armstrong reported that among 2,000 deliveries in the maternity district of St. Bartholomew's Hospital, puerperal morbidity was found to be ten per cent higher in operative deliveries than after spontaneous delivery.

Of all obstetrical operations, the cesarean section is the most abused operation. Many surgeons are called upon to assist in the difficult labor case. They are skilled in abdominal surgery, but, unfortunately, are not skilled in the operative delivery by the vaginal route. As a result, many cases are subjected to cesarean section which should have been delivered by either forceps or version and extraction if the surgeon were skilled in performing these operations. The mortality from cesarean section is entirely too high, and many of the deaths are due to infection. The mortality rate increases with the length of time the patient has been in labor, and attempts at delivery before a cesarean is done greatly increases the mortality rate. Cesarean section was studied in the hospitals of the borough of Brooklyn, city of New York, for the years 1921 to 1926, inclusive, and the following mortality rates were observed:

Total deaths 52; 17 or 33.5 per cent were due to peritonitis, and 9 or 19.8 per cent were due to septicemia.

Cesarean section continues to be a hazardous operation. In 9,719 cesarean sections reported in this country there was an average mortality of 7.58 per cent. One series of 362 cases was reported, with a mortality of 15.2 per cent. In Germany, in 1928, 4,450 cesarean sections were performed, with a mortality of 7.1 per cent. Infection was the cause of 58 per cent of the deaths. There must be a better understanding when to do a cesarean section; better still, when not to do a cesarean section. Where would surgery be today if the appendectomy carried with it such a mortality?

The laporatrachelotomy, as dscribed by Dr. DeLee, has done much to reduce the mortality from cesarean section and should be the method of choice,

especially in cases which have been in labor for any length of time. The mortality in the low cervical section is very much lower. Out of 1,410 cases reported in the literature, there was an average mortality of 1.57 per cent. Dr. DeLee reported 620 cases with a mortality of 0.96 per cent.

CHART NO. III

A Not in labor	343 cases	12 deaths or 3.5%
B Early in labor	110 cases	7 deaths or 6.4%
C Late in labor	403 cases	31 deaths or 7.7%
D After attempts at delivery	14 cases	2 deaths or 13.6%

In the third stage of labor the placenta should be given plenty of time to separate. The average length of time for the placenta to separate is fifteen to twenty minutes. Early attempts at delivery of the placenta by either traction on the cord or the "Crede" method often causes excessive bleeding or the retention of pieces of the placental tissue. The manual removal of the placenta is a very dangerous procedure and can only be accomplished by passing the gloved hand through the surgically unclean vagina up to the placental site. Excessive hemorrhage is the only indication for its manual removal.

Lacerations which occur during labor should be repaired at once. An open laceration may be the port of entry for pyogenic bacteria. In repairing a laceration, care must be taken to merely bring the lacerated areas together. It is to be expected that the tissues about the perineum will be edematous twenty-four hours after delivery, and tight sutures will cut and tear the tissues or produce a sloughing, and, with this, infection.

During the puerperium, the patient should be encouraged to rest as much as possible in order to build up her resistance. Elimination is very important, but not drastic elimination. Almost every woman who has been delivered has to face a dose of castor oil on the second or third day. I had an opportunity to observe, for two years, the obstetrics in one of the large obstetrical hospitals. There were two obstetrical services. On one, every patient received her castor oil, while on the other service the patient was given mineral oil twice daily and enemas as needed. I was surprised to observe the number of patients who had had castor oil present a rise of temperature coincident with its administration, and several of these suffered from puerperal infections. I have no statistics to support this impression.

It is important that the patient empty her bladder after delivery. After delivery, particularly in primipara, the bladder is congested, and often there are small lacerations in its lining. Residual urine is the greatest factor in producing a cystitis and other urinary tract infections after delivery. It is less hazardous to catheterize the puerperal bladder than to permit it to be distended with residual urine. Patients who do not void should be catheterized at least every six to eight hours. If there is a retention of urine, better still the use of a retention catheter.

When, during the puerperium, a temperature is noticed, many physicians at once begin to worry about there being a retention of infected material in the cavity of the uterus and administer pituitrin or ergot to clamp the uterus down. It must be remembered that the sinuses at the placental site are very tortuous and extend down through the muscle fibers of the uterine wall. Producing tight contractions of the uterus is just as likely to squeeze infected material into the blood stream as into the cavity of the uterus. It is dangerous to use oxytocic drugs in the presence of fever during the puerperium.

Any operative interference in the presence of puerperal infection is dangerous. Today, about the only indication is a localized abscess. It is still not uncommon for the patient who is suffering from a puerperal infection to be subjected to a curettement. In order to perform this operation, the surgeon must pass instruments through the infected vagina and cervix up to the cavity of the uterus. No matter how skillful the surgeon is, he can not possibly curette the uterus without injuring the musculature of the uterine wall. If infection is present, nature has already built up a leukocytic defense wall about the infected area, and a curette tears it down when a curettement is performed. The above remarks are also true of the infected incomplete abortion.

The patient who has had an operative delivery needs to be most carefully watched after delivery. Every patient who has had an operative delivery should be treated as a potentially infected case. As promptly as possible after delivery, the head of the bed should be elevated to facilitate drainage from the uterus and vagina. If presenting any evidences of shock, she should promptly be treated for the same. Drastic catharsis should be avoided, and, as these patients are more likely to have a urinary retention, the output of urine should be observed. Rest for the first three or four days should be assured by the use of hypnotics. The involution of the uterus should be observed daily, and if the uterus is still above the symphysis on the tenth day the patient should not be permitted to get out of bed.

Throughout the puerperium the patient should have an abundance of fluids and a nourishing diet.

Years ago, Oliver Wendell Holmes, in his essay on puerperal infection, said: "We do not deny that the God of Battles decides the fate of nations; but we like to have the biggest squadrons on our side, and we are particular that our soldiers should not only say their prayers but also keep their powder dry." Let every physician practicing obstetrics be prepare dto help prevent these infections by:

1. Giving the expectant mother better prenatal care, so that her resistance will be at its maximum at the time of delivery.

2. More careful and conscientious care during labor: (*a*) Preventing exhaustion of the mother; (*b*) being sure not to carry infectious organisms into the birth canal; (*c*) avoiding the operative delivery except when it is indicated; (*d*) when interference is necessary, minimizing the amount of trauma and bleeding.

3. More careful postpartum care.

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Discussion

DR. C. H. MAXWELL (Morgantown): I have attended quite a number of confinement cases, and, so far, I have had no case of puerperal septicemia. On several occasions I thought I had a puerperal infection, but on examination the patient was found to have a mastitis. It wasn't like Dr. Rankin's case, scarlet fever, but a caked breast. I don't know why I haven't had any septicemia. When I was in medical school they taught us to be aseptic and wash our hands clear up to the elbows, and taught us to wash them in permanganate of potassium and clean them off with oxalic acid. I used to do that, but I don't now. I carry in my pocket on all occasions a little box of bichloride of mercury. I keep a bowl of bichloride solution by the bed, with a bottle of aseptic and antiseptic oil in it, and never touch the vaginal tract without dipping my hands in the solution and anointing them with the oil. This is probably the principal reason there is no infection.

Another reason is, every patient gets strychnine and ergot every four hours after the baby comes, and strychnine is usually given before. I believe that if the uterus is kept contracted in a good, substantial way, the sinuses are closed and we do not get infection. Out of over 2,800 cases attended I have had no mother die, except one that bled to death. I had attended 2,600 births and no woman had died. Then came a very difficult case. The woman bled before the baby came and after it came. I gave her pituitrin hypodermatically and I gave her ergot by mouth, and all seemed well. I left another ampule of pituitrin to be given in an hour. When the hour was up she got the pituitrin, but vomited. I went to make some country calls, and was away from my office for two hours. When I got to the office the S. O. S. had come. The woman was dying, three miles away. In a very few minutes I was there—and in time to see her bleed to death. That is the only case of death I have had. If I hadn't been so cocksure of my treatment—if I had been a young doctor—I would have stayed by the mother a couple of hours to see that she wouldn't bleed again. I felt sure, when I left her, that the treatment that had not failed in more than thirty years would still be efficient.

This is a very important subject. I do a good deal of obstetrical work, and like it. I don't make rectal examinations, though. When the woman's bowels move involuntarily we get ourselves contaminated soon enough. I believe that, if we use asepsis and antisepsis, we can dilate the womb and not infect the woman. I have done that thirty-two years and haven't infected one yet. I believe that, if we keep our hands decently clean and antiseptic, we will not infect the mother.

DR. JAMES R. BLOSS (Huntington): This is an extremely important paper. This is a condition which, as the doctor has shown you very clearly, has too high a morbidity—too high a mortality. His slides showed that there is something wrong with the men doing obstetrics. Recently, at a county medical society meeting, a man came from another city to give an address on obstetrics as applied to general medicine and there were a scant dozen of men present. Two weeks later a man gave a paper on neurosyphilis and the place was crowded. What is the trouble?

In the first place, obstetrics is neglected. It is

neglected by the members of our profession. We are careless. Did you ever stop to think that obstetrics is major surgery of prime importance, and that there are two lives at stake? Is there a man among you who would do surgical operations with no more preparation and as carelessly as physicians go out and take charge of an obstetrical case? The hospitals would put you out if you did. They would not let you operate if you would do it that way.

I want to commend the doctor's paper, but he overlooked a lot of details of technique that men can do out in the mountains. I have done it in the homes for years. We can do aseptic obstetrics. We do not have to have a hospital, and they need not tell us that we must have all this, that and the other to do good obstetrics in the homes. We have done them up the alley, over garages, and every place else. We have carried with us sufficient things to do a cesarean section in the home if we had to. If you are not going to do obstetrics that way, for God's sake quit it and let somebody do it who will.

There is more unhappiness, more divorces, due to poor obstetric service than anything else and all the other things put together. How in the name of God can a woman do the things that she should do in her home; how can she be happy; how can she make her husband happy, if she feels like the devil all the time as a result of poor obstetric service?

Infection can be prevented. If one is going to have infected cases of obstetrics, he had better quit. I do not mean that we will not have some infections, but if we practice obstetrics as we do surgery, we will not have this septicemic mortality. You may have some infection due to the patient; you can be just as careful as ever you want to, yourself, but your patient will get infected. The granny woman from next door will help her get that way, no matter how careful you have been.

Any man who does obstetrics should get it into his head, first of all, that the actual delivery of the baby is the least of it. If you let the majority of women alone, and keep your fingers out of their vaginas and out of their rectums and do not get in a hurry, the woman and God will have that baby if you will just give them time. Doctors get in a hurry.

Another thing: Doctors go to the large medical centers and watch DeLee, or they watch Polak or they watch somebody else do a version or put on forceps, and they get an idea they are now prepared to do all obstetrical surgical procedures, and they come back home. Then, in order to impress the people in the neighborhood or in the city in which they live on how much they have learned during their post-graduate course in obstetrics, they have to do forceps and they have to do versions and this and that and the other. The thing they do not learn is prenatal care. Prenatal care has a vast amount to do with preventing infection and morbidity. Prenatal care consists of three things—examination, observation, and instruction. You examine your patient as carefully as you know how as early in her pregnancy as you can—and I mean really examine the heart, lungs, blood-pressure, teeth, tonsils, vagina. I am glad to have the doctor call attention to the fact that you can have dental work done. You should have dental work done. If there is an infected cervix following laceration at previous childbirth, you can cauterize it. You are not going to make them miscarry by careful cauterization. Many of these cases require vaginal treatment. We do not hesitate to give them such vaginal treatment as may be necessary, even to putting a cotton tampon in to maintain some dryness about the cervix after we have cauterized it, and they do not miscarry. We can have their teeth extracted; we can have their teeth filled, and if we do not advise that we are neglecting our work.

DR. NALE (*closing the discussion*): I agree with Dr. Bloss. It would have been much better if there had been a lot more on technique, but the time didn't permit it. I felt sure that it would come up in discussion.

Dr. Rankin asked me to mention something about amytal and chloroform. Amytal is very much in the experimental stage just now. I do not think you could buy it, even if you wanted to. Until we find out more about it, I don't think we can recommend it. I think it is a very promising agent in obstetrics and will be used.

In regard to chloroform, it is very convenient as a nanesthetic and it works very well as an analgesic, and it is a safe anesthetic in obstetrics unless there is some kidney damage or the patient is suffering from any of the toxemias, and then it is contraindicated.

I have a lot of respect for Dr. Maxwell and what he has said. Dr. Maxwell practiced medicine before I was born, and I remember, when I was just about ten or twelve years old, seeing Dr. Maxwell on cold, wintery days, riding on horseback to deliver patients.

I do consider it dangerous procedure to do vaginal examinations unless it is absolutely necessary, and then taking all the precautions, as the doctor

said, being sure you don't infect the patient. In doing rectal examinations, if done properly you do not contaminate yourself; you use a rubber glove, an entirely separate rubber glove, in examining the patient, and then discard that glove and prepare yourself before you have the delivery.

A NEW RADICAL MASTOID OPERATION *

By J. MORRISSET SMITH, M.D.
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This operation is presented as an improved technique for performing the radical mastoid operation. The diseased contents of the middle ear, eustachean tube, attic, antrum, and mastoid are thoroughly removed as in the radical operation. It differs from the radical operation by accomplishing these steps without removing the posterior bony canal wall. Allowing this danal wall to remain in place makes it possible to avoid the post-operative radical cavity and flap and permits a solid post-auricular union or healing as obtained after a simple mastoid operation, the end results being similar to an ordinary healed O. M. P. C.

Technique.—The usual simple mastoid incision is made, starting over the center of the mastoid tip and following the normal curve of the external ear one-quarter to one-half inch behind its attachment. The incision extends upward just above the temporal ridge. The cortex is exposed with the spine of Henle, the temporal ridge and mastoid tip in full view. The bone is removed just below the temporal ridge and behind the spine of Henle until the mastoid antrum is opened. The posterior canal wall is not lowered unless it is necessary to remove the outer part to avoid a far-forward lateral sinus. All of the granulations and diseased bone are removed from the antrum and mastoid cavity as in the simple mastoid operation. In the average chronic case there are few if any mastoid cells present; the cavity is cleansed, however, to healthy plate or bone, regardless of the extent.

The additus is now enlarged by removing a small portion of the inner part of the bridge just external to the incus and horizontal semicircular canal. If this opening is made too large, it may interfere with the granulations filling in the posterior wound. The remnants of the ossicles may be removed through the additus. In some instances it may be easier to remove the malleus through the external auditory canal. The posterior half of the membranous canal is then carefully separated from its bony attachment in the external auditory canal and held in place against the anterior canal wall, allowing the anterior membranous attachment to remain intact if possible. This allows access to the middle ear and attic. Through this opening the granulations and débris are removed from the middle ear.

The annulus tympanicus is then removed and the eustachean tube thoroughly curetted. This leaves the attic and the bony space extending posteriorly into the additus to be cared for. Free access may be had to this space in the roof of the middle ear by partially removing the external wall of the attic. This corresponds to the rim of bone furnishing the attachment for the upper part of the annulus tympanicus or the bony rim on each side of the Ravnin fissure. The removal of this bone, together with the contents of the middle ear, must be carefully performed, since the floor of the cavity at the time of the operation is represented by the internal wall of the middle ear. The facial nerve, crossing the inner wall through the fallopian canal, is covered by a very thin layer of bone; pressure on its wall will result in facial paralysis. An accurate knowledge of the anatomy is necessary to avoid the removal of the stapes or injury to the labyrinth. Care must also be taken to leave a firm posterior bony canal wall; necrosis may result if too much of it is removed.

The operation at this point is represented by a clean middle ear, attic, antrum, and mastoid cavity, with the posterior canal wall in its normal position. The membranous canal is now restored as nearly as possible to its original position in the external auditory canal and packed in place with vaseline gauze. A cigarette drain is inserted directly into the mastoid antrum behind and the mastoid wound closed above and below with clips.

After Treatment.—The subsequent mastoid dressings are identical to those following the simple mastoid operation. The clips are removed the third day, the wound cleansed, and the cigarette drain replaced. It is then dressed every day or every second day until healed. The reaction and discharge following the acute cases are usually absent, and clean granulations fill in the bony cavity with complete healing of the wound in three to four weeks. The canal packing is allowed to remain in place three days. It is then removed, the canal and middle ear cleansed, and the packing replaced daily for eight to ten days; after this the packing is dis-

* Read by title before the Eye, Ear, Nose and Throat Section of the West Virginia State Medical Association at White Sulphur Springs on May 21, 1930.

continued and boric irrigation is used three times a day, followed by alcohol drops.

There is a tendency for granulations to form in the middle ear, especially on the bare bone at the bottom of the bridge and external attic wall. They may be removed with a sharp ring curette or a small aural biting forceps after the insertion of a pledget of ten per cent cocaine solution. It is absolutely essential to have the internal wall dermatize without granulation tissue. It is therefore necessary to have the middle ear and mastoid wound free from blood when the original packing is inserted at the close of the operation. Time should also be taken to remove the blood collecting in these cavities following the first three or four dressings. This insures the best hearing results. About six weeks are required for dermatization of the canal and middle ear. Daily dressings are necessary to obtain the best results.

Contraindications.—It is contraindicated when there is an abnormally small and deep external auditory canal; a normal-sized canal is needed to properly carry out the after treatment. When there is an unusually far-forward sinus, an extensive necrosis of the posterior canal wall, or any symptoms of facial nerve, internal ear or intracranial complications, a complete radical operation should be performed.

From the writer's point of view, it is not possible to employ any one type of operation in all cases of chronic mastoiditis. It is my custom to let the degree of necrosis in the individual case dictate the type of operation to be employed. I do not hesitate to perform a complete simple, a new radical, or a complete radical operation, depending upon the one I feel will yield the best results.

Advantages.—The decided advantages of this procedure over the radical operation are due to the removal of the diseased contents of the middle ear and attic without disturbing the posterior bony canal wall. Allowing the posterior wall to remain in its normal position avoids the post-operative radical cavity and plastic flap. It is easier to keep the internal wall of the middle ear free from granulations after the operation. The subsequent hearing is largely dependent upon this one factor in any operation requiring the removal of the ossicles.

The exenteration of the diseased tissue of the middle ear and mastoid is practically as complete as that following the radical operation, with the exception of the removal of the posterior bony canal wall.

The normal tubular external auditory canal remains to collect and convey the sounds directly to the internal wall of the middle ear. Finally, there is the advantage of avoiding the years of after-care and treatment necessitated by the radical operation.

Case Presentations.—Four cases upon which I have performed this operation were shown before the otological section of the New York Academy of Medicine on March 14, 1930. They were operated upon at the New York Eye and Ear Infirmary. The hearing tests were all made with a 2A Western Electric audiometer. Their records are as follows:

CASE I.—Male, age 30; chronic purulent mastoiditis, right ear, ten years' duration. New radical operation, November, 1927. Mastoid healed and middle ear dry five weeks after operation. Hearing by audiometer before operation, 51%. Hearing by audiometer, January 13, 1930, two years and two months after operation, 85.4%. Improvement in hearing after operation, 34.4%.

CASE II.—Male, age 27; chronic purulent mastoiditis with cholesteatoma, right ear, nine years' duration. New radical operation August 17, 1928. Mastoid healed four weeks; middle era dermatized and dry six weeks. Hearing by audiometer before operation, 47%. Hearing by audiometer, January, 1930, one year and five months after operation, 65.4%. Improvement in hearing after operation, 18.4%.

CASE III.—Male, age 26; double chronic purulent mastoiditis with cholesteatoma since infancy. Radical mastoid operation, right ear, June, 1916. Ear dry since. Small attic perforation, left ear, almost whole drum intact; very foul-smelling discharge. Simple mastoid tried, left ear, November, 1928. Cholesteatoma found and operation was not successful. New radical operation was performed December 12, 1928. Removed to general hospital during convalescence with ruptured duodenal ulcer. When next examined, middle ear was dry, with a complete secondary drum membrane present. Secondary drum removed February 21, 1930. Audiometer, right ear, 63.3% hearing. Audiometer, left ear, February 26, 1930, 77.4%. (Note the opportunity presented in this case to compare the results of the two operations.) Improvement: 14.4% more hearing in the ear with the new radical operation.

CASE IV.—Male, age 37; double chronic purulent mastoiditis, thirty-six years' duration. New radical operation, left ear, December 16, 1929. Mastoid healed five weeks. Ear dermatized and dry five weeks after operation. Hearing by audiometer before operation, 65.6%. Hearing by

audiometer, February 25, 1930, two months after operation, 76%. Improvement in hearing after operation, 10%.

Summary.—Cholesteatoma was found in two of the four cases. Average duration of discharge in the four cases was nineteen years. Time elapsed since first operation two years and two months. Time elapsed since last operation, three months.

Average hearing after operation, 76%; average improvement after operation, 14%.

THE RELATION OF SINUS DISEASE TO PULMONARY INFECTION, FROM THE STANDPOINT OF THE RÖNTGENOLOGIST *

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The relation between sinus disease and lung pathology is by now well established. Twenty or more papers on the subject in the last eight years show a general belief that accessory nasal sinus disease is frequently responsible for lung pathology of one kind or another. It is not contended that all chronic sinus infections produce definite lung infections, nor that all chronic lung infections are due to sinus disease; but, judging from the opinions expressed in these papers and fortified by my own experience, I believe that the two conditions are to be viewed in the light of cause and effect, and that the sinus disease plays the causative part. It is pretty generally agreed that röntgenology has played an important rôle in the diagnosis and prognosis of these conditions, and in some clinics it has been depended upon to show results of treatment. Dennis,[1] Preston,[2] Kern and Schenck,[3] and others point out the fact that the result of the x-ray examination is not always reliable in the diagnosis of disease of the accessory sinuses. Some of the views expressed in this connection might be open to argument. However, I do agree that conditions are frequently met in the x-ray study of the accessory sinuses that present difficulties in the way of interpretation and are perhaps conducive to error.

These difficulties might be considered under three general heads: First, variation in the size of the head and thickness of the bones of the skull; second, variation in the shape of the skull and, particularly, the relations of the bones at the base of the skull with the accessory sinuses; and, third, radiographic exposure technique.

One can, of course, determine the size of the head prior to radiographic exposure; but it is not possible to predetermine the thickness of the skull—and yet the thickness of the skull alone may determine that the radiograph is or is not an entirely satisfactory one to interpret. This variation in the side of the head and the thickness of the skull makes it extremely difficult to get uniform quality in the radiographs.

There is an appreciable variation in the arrangement of the bony parts of the base of the skull and of the upper cervical vertebræ. There is also variation in the size of the individual parts of the skull. For instance, one patient may have a relatively small petrous portion of the temporal bone, whereas another will have a very large petrous portion of the temporal bone. They vary not only as to size but also as to the amount of dense bone they contain. The condyles at the base of the skull may definitely interfere with clear views of the maxillary antra in one of the favorite angles of exposure. This is true, also, of the transverse processes of the upper cervical vertebræ.

Most röntgenologists have in mind a definite angle of exposure with relation to the base line of the skull for their postero-anterior views, and this leaves out of consideration entirely the shape of the skull and the arrangement of its parts with relation to the maxillary antra. An angle of exposure that will show the frontal sinuses well may not be satisfactory for the maxillary antra. One that will show the maxillary antra may not be of any value for the study of the ethmoids and the frontals, and yet too often is it the case that a röntgenologist attempts, by a single postero-anterior exposure to give information on these three groups of sinuses. Even this is not the most prolific cause of errors. I believe that they are mostly due to faulty technique, in that the central ray does not pass through the sagittal line of the skull, but in some degree of obliquity to that. It requires only a very slight deviation from this central line of exposure to produce a difference in the appearance of the ethmoids and of the maxillary antra—the latter particularly, because on one side it brings the shadow of the petrous portion of the temporal bone over the antrum, whereas on the opposite side it tends to throw the shadow of the petrous portion external to that of the maxillary antrum. The same is true of the shadows of the cervical vertebræ when the exposure is made below the base line of the skull for satisfactory portrayal of the maxillary antra.

* Read before the Central Tri State Medical Society, May, 1930.

We have next to contend with the variation in the quality of the radiographic exposure, which comes from a variation in the quality of the ray used and the amount of it. Overexposure with rays of high penetration produces a flat, dull picture lacking in contrast; whereas underexposure with rays not sufficiently penetrating produces films so lacking in density as to be useless. I suspect that sometimes this radiographic quality is not taken into proper consideration, and that it has a share in the recorded errors. In recent years, since the development of the Potter-Bucky diaphragm, one is permitted a wide range of exposure liberty because the element of scattered radiation, which plays so much a part in the exposure of overpenetration, is almost entirely eliminated by the diaphragm. When the Potter-Bucky diaphragm is used, the shadows of all parts of the head are so extremely contrasty that it is difficult to recognize slight variations in the regions of the accessory sinuses. I believe that some of the errors that are charged against röntgenology are due to the overanxiety of the röntgenologist to recognize slight changes from the normal. This is a dangerous thing to do from a single or a flat exposure. Then there is another possible source of error, and that is that the patient may be sent to the röntgenologist immediately after a sinus has been drained, so that he will get a practically normal shadow of a sinus that is definitely known to be diseased, or, if any irrigating process is used, the solution left by the surgeon may give a picture similar to that of a sinus filled with exudate, and, in that way, lead to a mistake in interpretation. I believe that most of these difficulties and mistakes can be avoided or overcome by reëxamination in doubtful cases, and, especially, where there is any recognizable error in technique or where the development of the base of the skull has presented unusual difficulties.

The sphenoid sinuses will always present difficulties for the röntgenologist, particularly in determining whether one side is diseased while the other is normal, because of the marked variation in the development on the two sides, and, further, because of the fact that the septum sometimes runs crosswise rather than antero-posteriorly. The sphenoids are difficult to isolate in any sagittal position, and the shadows are exaggerated because it is not possible to get the sphenoid sinuses close to the film. I have come to depend very largely upon stereoscopic views in the lateral direction to determine whether or not there is disease of the sphenoids, and then try, by special sagittal or corono-mental views, to determine whether the lesion involves one or both sides.

It is probable that the vast majority of the mistakes charged to röntgenology could be overcome by reëxamination whenever the radiographs are not up to a definite standard of excellence, whether the lack of quality is due to a fault in technique or to some variation in the development of the head. Stereoscopic views give one much more confidence and, I believe, more accuracy than single exposures in any direction. It will be found that most of the mistaken interpretations are with relation to the maxillary antra, and here, particularly, stereoscopic films are of real benefit. Then, too, in doubtful cases or even as a routine, a film in the Waters position can be made so that the shadows of the petrous portion of the temporal bone are thrown below the maxillary antra shadows rather than above them. I think a reëxamination should be done whenever there is a difference of opinion between the röntgenologist and the rhinologist, and, by means of lipiodol injections, it should be possible to make a diagnosis, at least of antral disease, a relatively positive one when it exists.

There is some advantage in examining patients in the sitting posture[4] rather than in the prone posture. I have, in quite a few instances, found evidence of fluid level in diseased frontal sinuses, and, of course, the sitting posture is required for a study of the maxillary sinuses in connection with lipiodol injections.

In the diagnosis of lung changes, röntgenology ranks first in importance. We find three general types of changes in association with sinus infection: First is the general peribronchial thickening, due, evidently, to a generalized chronic bronchitis; next, there is the type in which the glands at the roots of the lungs and other tissues in this region are markedly enlarged and produce bronchial irritation and, particularly, obstruction by pressure; then, there is the more or less localized chronic infection in the lower lobes which leads frequently to more or less extensive degrees of bronchiectasis and diaphragmatic adhesions. I do not recall a true lung abscess that could be attributed definitely to sinus infection as a cause, unless there was also operative interference with the sinus infection.

Many of the papers above referred to depend upon Dr. Mullin's[5] experiments to explain the route of invasion by way of lymphatic circulation; but Clerf[6] and others feel that the inhalation of infected particles from the upper respiratory tract

plays a very definite part in the matter of invasion. Mr. E. D. Davis[7] states that lungs may be infected by direct extension of inflammation of the nose, and that an existing lesion of the lung is aggravated by nasal sepsis. I believe that infection does enter the lower respiratory tract by the lymphatic route, by the inhalation route, and also by direct continuity.

Without having made a critical study of the cases that I have examined, I think it is safe to say that, in the cases where the lung lesion has reached the stage of bronchiectasis, the sinus disease is so well established that both the x-ray diagnosis and the clinical diagnosis should be made very easily; and yet we have repeatedly seen cases of bronchiectasis with advanced chronic sinus disease that have never received any diagnostic or therapeutic consideration of the sinuses. I think that, in most of the cases where the lesion in the lung is well established at the root area, sinus disease is also in a chronic or advanced state of development, and this is probably true also of the cases of well-established general peribronchial thickening. In these the treatment must be directed not only to the sinuses, but also to the lungs.

It is not so difficult to determine radiographically that there is evidence of disease in a lung, but it is difficult at times to determine from a single examination whether the lesion is acute or chronic. For example, it is well known that when fibrosis takes place in lung tissue, the mediastinal structures are drawn to the side of the fibrosis. This same transfer of the mediastinal structures will occur if portions of the lung become atelectatic, due to bronchial obstruction. In the one case the condition is permanent; in the other, the displacement disappears with resumption of function in the lung. Radiographically, they may be very difficult to differentiate at the stage when the displacement is most marked. Then, too, the bronchial shadows are increased during an acute bronchitis and have very much the same appearance as when they are enlarged from a chronic bronchitis; and also exudate in the lower lobe bronchi during an acute stage may give very much the appearance of a bronchiectasis, so that accurate differentiation of the stage of a disease sometimes can be made only after repeated examinations or with the aid of the bronchoscopist, either in getting information by direct vision or by the instillation of iodized oil to determine the presence of bronchiectasis; or there may be some definite etiological data whereby one can classify the lesion as to chronicity.

These lung changes are particularly recognizable in children during the early stages, and I believe that many of the instances in which diagnoses of tuberculosis have been made from radiographic evidence of enlargement at the root of the lung have been instances when the root glands and peribronchial glands have been infected from antral disease. I could cite one case after another in proof of this. One perhaps will suffice to emphasize the point: A child, four and a half years of age at the time of admission to the Chevalier Jackson Bronchoscopic Clinic at the Jefferson Hospital, complained of cough, wheeze, elevation of temperature, no expectoration, no nasal discharge. The history was that the child had bronchopneumonia at three months of age, which lasted nine days. Since then she has been susceptible to colds and has had colds almost every month, severe cough, no expectoration, vomiting, and has had elevation of temperature. Always, during these attacks, she has been under the care of a physician. Finally, a clinical diagnosis of asthma was made. Food tests for protein sensitization were made and the child was found to be positive for fish. No improvement followed removal of fish from the diet. The child had bronchopneumonia again in 1928 and 1929. Cough without expectoration and slight elevation of temperature continued all the time. X-ray examination was made April 15, 1929, and all accessory sinuses reported cloudy. Definite lung changes, especially at the root area, were noted. Bronchoscopic examination, April 20, showed a considerable quantity of thick, tenacious secretion in the trachea and both bronchi; the mucosa was intensely congested. Another x-ray examination of the sinuses in October, 1929, showed all the sinuses to be opaque. There was marked cloudiness at the roots of the lungs, especially on the right side. October 24, the bronchoscopic findings were: "Definite increase in the secretions of the lower lobe bronchi." Between April and October the child improved greatly under bronchoscopic treatment and some attention to the accessory sinuses. At the third x-ray examination, March, 1930, there was very much less density at the root area and in the right lung. The sinuses were still dense. At this time the mother volunteered the information to me that there had been times when she felt the sinus condition to be worse and then the cough was at its worst, and when the sinus condition seemed to clear up, then the cough disappeared to some extent. I believe that this child had sinus disease very early in her life, and that,

because it has existed through this early stage of the development of the sinuses, she probably never will have normal or healthy sinuses.

I have followed another child through repeated attacks of bronchitis which have responded very promptly to treatment directed to the ethmoids. In each attack there has been no discharge from the nose, and the lesion seems to have started with a cough; but each time we have found radiographic evidence of disease of the ethmoids and each time, by suction, mucopurulent exudate has been removed. I have seen the child have treatments and have observed that even touching the membranes in the region of the ethmoids would immediately produce a cough. After each attack the sinus disease has responded to treatment and the cough has cleared up just as rapidly as the sinus disease cleared.

I think these two cases represent the extremes of chronic and acute sinus disease and the pulmonary conditions associated with them. In the first instance, the child has not had attention to the sinus disease and it has developed into a chronic state and probably will never be entirely cured. With this, there have been repeated lung infections. I believe that they are now becoming chronic, even though greatly benefited by bronchoscopic treatment. In the other case, the sinus disease has been recognized, properly treated, clears up promptly, and we have hopes that he will eventually be rid of it.

I am quite certain that sinus infection occurs in children of early age; that it may exist without the presence of nasal discharge or any definite outward evidence of infection; that it does tend to recur when it does clear up, and eventually becomes a chronic process, involving many or all of the sinuses, if not properly treated. My reason for this belief is that, as a result of radiographic study of large numbers of patients for Dr. Chevalier Jackson, who requires radiographic study of the sinuses, neck and chest in every patient who has any sign whatever of respiratory tract disease, it frequently happens that we find disease of the accessory sinuses that neither the patient nor his physician has known anything about.

Many of the cases of sinus and lung infection also have asthma—sometimes true spasmodic asthma, because they are sensitive to the products of their own infection. Sometimes they have expiratory difficulty and wheezing respiration, because the exudate of the lung infection is thick and sticks to the bronchial walls, producing more obstructon to expiration than to inspiration, just like any other foreign body, and the dyspnea is so marked and associated with such wheezing that the diagnosis of asthma is made. In this case, emphysema becomes more or less permanent, due to long-standing continued effect. In the case of a vegetal foreign body, such as peanut, in the trachea or a bronchus, the emphysema is acute, is distal to the foreign body in one or both lungs, and disappears when the foreign body is removed.

When such a foreign body is in the trachea, it is frequently mistaken for asthma, because the mechanics are the same in the two cases, in that both lungs are involved, the patient wheezes and has more difficulty with expiration than inspiration, and at times is extremely dyspneic.

The lung changes[8] in asthma follow the same types as above mentioned, *viz.*: general peribronchial thickening, enlarged root structures, and lower lobe infections, including adhesions to the diaphragm.

Dennis[1] reports a series of sixty operated cases of sinus infection. Twenty-eight had asthma; twenty-four had bronchiectasis, and eight had other troubles—nephritis, lung abscess, cardiac involvement, and arthritis.

D. M. Lierle[9] reports a series of twenty cases of asthma in children, age limits two to fifteen years, in all of whom there was sinus disease, and chronically inflamed tonsils in ten.

In a series of 354 asthma cases, I found in more than 60% positive x-ray evidence of sinus disease, and of that number 85% had demonstrable lung changes.

Drs. Kern and Schenck[3] report x-ray evidence of sinus disease in 80% of two hundred asthma cases. They included all suspicious cases, but then showed that the x-ray findings in these cases were not all substantiated by clinical and operative findings.

Clerf[6] calls attention to an important group of cases. They come to the clinic with cough and huskiness of voice. Mirror laryngoscopy shows chronic laryngotracheitis. The paranasal sinuses are chronically infected. This seems to be one of the chief etiological factors, and, by cleaning up the sinus condition, cure or improvement of the lower respiratory tract is seen. Clerf considers sinus disease as one of the important causes of bronchiectasis, and believes it is often overlooked because of lack of symptoms. He also points out an important fact: that bronchiectasis from sinus disease is bilateral, whereas from foreign bodies of long sojourn it is almost always unilateral, and usually is when fol-

lowing pneumonia. I have also noted this fact with relation to foreign bodies of long sojourn.[10]

Drs. P. Watson-Williams and F. A. Pickworth[11] are of the opinion that infection of the sinuses may be responsible for gastrointestinal infection, as well as for pulmonary infection. They also subscribe to the belief that the infection may travel by contact or continuity along the mucous membrane, by the blood or lymph stream, or by inhalation.

Drs. M. Schwartz and Weiner[12] make the interesting observation that in cases of polypoid degeneration of the sinuses without free pus the danger is greater than in those with free pus, because of the greater absorptive surface. They, of course, believe in the lymphatic route of invasion as described by Mullin. I have not made a complete analysis, but it seems to me that polypoid degeneration has been a rather frequent finding in cases of asthma.

Dr. J. T. Malone[13] points out that cases of lung pathology associated with sinus infection are frequently mistaken for tuberculosis.

Dr. Grant Preston[2] holds to this same view, but reminds us that it is sometimes difficult to differentiate a case of hilus tuberculosis from the glandular enlargement of sinus infection. Preston adds another interesting thought: that children with history of repeated attacks of pneumonia should be suspected of having sinus disease. My own experience confirms this observation.

Dr. F. B. Kistner[14] reports 196 cases of chronic non-tuberculous bronchitis, 190 of whom had sinus disease. The ages were from four to seventy-one years; mostly between twenty and fifty. One hundred and sixty-four of these were operated upon and treated for sinus disease, with excellent results. He advocated routine intranasal puncture of the maxillary antra for diagnostic purpose when doing tonsillectomy.

Dr. Ernesto Raffo[15] expresses the idea that the sinus infection and lung infection may start together, but that the sinus symptoms are so overshadowed by the chest symptoms as to be overlooked. Many of his patients could not recall the onset of their sinus disease, and this is true of many of the patients I have studied.

Dr. H. St. John Williams[16] adds a valuable point in showing that, even in tuberculous cases, sinus disease may be responsible for much of the cough, and that in such cases marked improvement is gained by treatment of sinuses. He also states that from five to sixteen per cent of cases diagnosed as tuberculosis are not tuberculosis; hence, sinus study is important because disease of the sinuses is the most common cause of non-tuberculous chronic cough.

Dr. H. Kennon Dunham[17] also emphasizes the resemblance of lung pathology associated with sinus disease to pulmonary tuberculosis. He even says that the symptoms, signs, clinical manifestations, and sometimes x-ray findings in the chest simulate pulmonary tuberculosis. This shows the importance of careful sinus study.

Dr. D. C. Montgomery[18] is of the opinion that there has been an increased number of cases of sinus disease since the influenza epidemic of 1918. He cites a variety of lesions that may follow sinus infection.

Dr. R. W. Knight[19] emphasizes many of the above-mentioned points and recommends that the röntgenologist should make sinus studies in every patient whose chest radiographs have the appearance of chronic inflammatory changes.

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MENTAL HYGIENE IN INFANCY AND CHILDHOOD *

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It is a well-known fact that we ourselves become nervous in the company of a nervous person; so it seems but natural that the infant should succumb to the same influence. As we know, our domestic animals are extremely sensitive to the frame of mind of man. The horse becomes jerky and nervous; the dog, too, grows to be shy and fidgety in a troubled environment. The same may be observed in the smallest infants, who are just as little able to fully understand their environment. Whenever the baby is nervous and "finds no peace," a conflicting environment is frequently to blame. The child senses that the people around it are impatient, cross or nervous, and so becomes neuropathic, nervous, and morose.

It is obvious that the modern type of mother, in whom varied diversions, sports, recklessness, and flirtations are at variance with a mother's duties, must endanger the equilibrium of the child. Such conflicts in the child's environment may also be caused by social conditions. Hunger, misery, and unsolved sex problems cause indirectly, through neurasthenia of the grown-up people, restlessness and psychic uneasiness of the baby. For all that life brings to the new dweller on this earth, of physical and psychical discomfort, it has but one means of expression—the cry. It is the physician's task to diagnose the cause, and to remove it whenever he can.

The nervous system in the new-born infant is limited both in receptivity and in registration. Consciousness is present, but the special senses at best perceive imperfectly. Anatomically, the nervous system in a normal new-born infant is complete in its elements; but certain processes, such as myelination of fibers with a consequent isolation of special paths, are incomplete. These paths act as conductors and coördinators of various neuronic activities, and in some parts of the nervous system their complete development is delayed for months. For this reason, muscular incoördination is normal in new-born infants, and in many children mild tremors and twitchings of the muscles occur. For this reason, too, evacuations of the bladder and the bowel are matters of spinal control, and cerebral inhibitions which later develop are now largely in abeyance. Most forms of enuresis in later life are due to persistence of the spinal type of bladder control.

It is characteristic of the new-born that the infant reacts with great promptness by motor responses to sensory stimuli. Anything that touches the lips may produce the sucking reflex. Pressure or pain will evoke in the child a motor response into which all the skeletal muscles may enter. Stimuli that can be recognized, however, are few in number.

From birth, certain infants are incapable of perceiving or reacting to irritations of the nervous system. In the normal infant, common sensations, especially those of hunger and thirst, will be recognizable from the first few days of life. The sense of taste, while far from exquisite, is undoubtedly present very soon after birth, although its acuity must vary with different infants, as some will object to ill-flavored mixtures that others will accept without protest.

After a few days of life, a normal baby should discriminate between the intensity of different sounds, and many little ones are frightened by the banging of doors and by very loud voices. Light perception also is present early in life, but coördination of the ocular movements is a much later development, and it is rare for an infant to recognize individuals and to follow attractive objects with the eyes until it is four to six months old, although occasionally this phenomenon may appear in infants as early as the sixth week of life.

Consciousness is a function of simple registration. The emotions are modifications of consciousness which go hand in hand with increasing acuity of sensory perception and of a development of the apparatus which coördinates sensation with motor responses. During infancy and childhood, in the nature of things, the personality is much restricted. Janet teaches that hysteria in later childhood and adult life is the result of a reversion of the individual to this type of restricted infantile consciousness, and

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that neurasthenia is due to the opposite state of affairs; that is, it follows on the development of expansiveness of the personality. In an infant, anger and resentment in response to personal discomfort are exhibited by typical motor evidences, such as kicking, screaming, and struggling.

In the earlier months of life there is little evidence of pleasure. A well-fed, normal baby shows no physical evidence of bodily wellbeing except sleep and contentment; but, as it gets toward the end of its first half-year, it does evince delight by cooing and smiling and by controlled movements, such as waving its arms and legs and playing with its fingers and toes. Time is an essential element in the storage of sensations and their influence over the newly developed efferent tracts, so that, little by little, the personality of the individual is developed and with it certain mental faculties which seem to bear definite relation to the emotions.

The first of these qualities must be *memory*. The power of memory is shown by voluntary repetition of various movements which were primarily aroused as involuntary reflexes. Some children of limited mentality repeat, in a purposeless way, hour after hour, the same movement. Such infants fail to register the normal number of stimuli which are essential to the development of a full mentality. This limitation may be, and usually is, due to some definite physical defect in brain structure.

Next to memory, *will* is probably the earliest of the mental faculties to develop in an infant. The characteristics of will in an infant is persistency. Overpersistency can very readily develop into obstinacy. It is also typical of the infantile will that it is readily diverted by the wise presentation of an engaging interest—a fact that will always be utilizable in the proper training of young children. Attention and concentration are essential to the development of will, and the infant is unable to exhibit will until it has developed certain powers of concentration.

Imagination begins to develop towards the end of the first year, and it is evidenced in the child's play. At first it is very simple, and most often its earliest evidence is seen when the child pretends to be taking food from an empty bottle, although it may be so surfeited that it may not desire to be fed.

The development of the personality continues throughout the period of individual human existence. The fundamental contributions, however, are made during the first seven or eight years, and, of these, those acquired during the first and second years are of the greatest importance.

It is difficult for a medical man to accept any theory of normal nerve function or functional disturbance that is based upon the conception of inborn intellectual unit characteristics which are independent of the physical structure. Certain modern psychologists, affected by metaphysical considerations, are attempting to support a theory which classifies emotions and single intellectual qualities as inheritable unit characters, entirely independent of anatomical structure. On the other hand, most medically trained psychologists believe that observation leads inevitably to the deduction that all nervous processes, including the mental, are the result of stimuli perceived and the translation of these through the motor apparatus into action; or, when action is not induced, their storage as sensory impressions in memory, conscious or subconscious. The storage of sensory impressions and the ability to recall these and use them in initiating movements under the direction of the will, giving a simple explanation, satisfactory for all normal and abnormal processes, whether they be purely nervous or mental.

Either the perceiving, the conducting, or the registering apparatus may be oversensitive or undersensitive. Perception of stimuli may be excessive and the motor responses to them out of due proportion. Undersensibility may affect the whole tract or only part of it. Increased perception of the stimuli does not necessarily induce increased activity on the part of the motor apparatus, but, on the other hand, the normal perceiving apparatus may send nervous impulses to oversensitive motor neurons. In certain cases, the conductivity of the nerve paths between the receptors and the motor neurons may be in such a physical state that impulses are carried imperfectly, or the irritability of these paths may be such that small impulses that ordinarily are ineffective are carried forward in a manner sufficient to stimulate the motor cells and to produce muscular activity. Such a state of affairs is seen in spasmophilia and in tetany. Such hyperirritation is chiefly evinced by cutaneous hyperesthesia, photophobia, intolerance of sounds, motor instability, in convulsions and laryngismus during the age of infancy, as well as by chorea and tics in later childhood.

The influence of the sympathetic nervous system on the physical and mental functions is especially great during the first two years of life. It is the sympathetic that modifies the blood supply to the various parts of the body; undoubtedly, the readi-

ness with which a child flushes and pales, and the frequency of the minor symptoms of anaphylaxis so commonly seen in infancy, such as dermatographia and cold hands and feet, are eivdences of some slight abnormality in the sympathetic nervous control. In the more serious states, such as asthma and acute protein poisoning that occasionally appear to disturb the child, the rôle of the anbormally acting sympathetic is clear. Increased irritability of the sympathetic is probably part of the explanation of the instability of the infantile emotions. It is characteristic of these emotions that their expression is explosive and excessive, but without great persistency; it is the continuation of this type of emotional response past the first year that leads to the neurosis of older infants and children and even to those of the adults.

The proper training of the nervous system of children, especially of those who are hypersensitive, is an essential factor in the prophylaxis of neurosis. This training should be begun at an early age by means of simple measures, and it is important that it should be continued throughout the first two years of life, for it is in these years that the type of nervous reaction which is to become characteristic of the individual is very largely determined. It must never be forgotten that the training must be such that it arouses and fixes no antagonism on the part of the child, for many children are trained to be neurotics by overinterference with their normal nervous development. Because of human imperfection, even children will at times show habits that can be interpreted as neurotic; but most of these are automatically eliminated as time goes on, and further development of the nervous and psychic systems takes place. For example, thumb-sucking is a normal and not a particularly undesirable habit in young infants; but in most instances it is given up as the child develops a wider sensory field and the power to acquire other gratifications.

Habit is the result of repetition of certain sensory receptions followed by motor responses. It is well known that repetition renders efferent and afferent paths and receptors more sensitive, and it is also clear that, during the period while coördination of the sensory or motor functions is developing, we may expect the best results from attempts to guide the development of desirable habits.

The proper environment for an infant is one in which only a few sensory stimuli will reach it in the earlier months of life, although, in the latter months, increasing numbers of stimuli must be permitted. The child should be so placed, and its surroundings so ordered, that these stimuli, as far as possible, may be kept under control of the parents or attendants. This means, in practice, that the child should be kept clean and comfortable. The possible relationship between an irritable temperament in later life and physical discomfort throughout infancy is worthy of consideration. The intolerable weight of excessive bedclothing, not to mention the retention of body heat, may readily lay the foundation for an explosive irritability of temperament which, coupled with improper training, shows in later life in the disposition of the individual as a permanent defect. The same result may follow from the practice of taking the child up whenever it cries, although in this case the physician certainly must sympathize with the mother of an irritable infant, for it is most agonizing to the parent to hear the continuous and poignant crying of an unhappy baby. Soon the crying becomes an index not of discomfort but of the child's will to be obeyed, and if the infant is fortunate enough in its mother, a struggle is initiated which leads finally to the knowledge that the mother is an authority to be respected; but, too often, parents and grandparents, and nurses as well, give way and the child very soon comes to respect no authority but its own. Just here may be laid the beginnings of an imperious, self-willed temperament which has no toleration for discipline. This lack of respect for authority and intolerance for reasonable discipline is undoubtedly among the greatest of the social evils that plague us at the present time.

These and other similar indulgences are contributions to the development of self-centered, disagreeable personalities. One of the unhappiest examples of bad training among infants is the child who behaves as though the world was centered about it, with an adoring family dancing attendance and giving way to every whim. If the attempt is made by an adult to assert his own desire, voluble and tearful demonstrations of anger on the part of the child are followed by an abject surrender to it.

In this group of circumstances lies one of the explanations of many neuroses that appear in later years, for, in such a way, the developing mind is given so great a trend of self-will that it becomes overweighted in ego. Such an endowment insures those mental conflicts that are known to lead to the neuroses; for when an individual who has been trained in this way leaves the sheltered environment of which it is the hub, and participates in the stern realities of school life and later those of the world,

the conflicts may become so great that the nervous system is inadequate to perform its protective functions and becomes a menace rather than an aid. One of the most important services the doctor can render a family is by gentle friendliness, to protest this mistaken kindness and to instruct the parents of the dangers that lie along this path. Such parents are usually conscientious and their error is caused through ignorance, and to show them their duty is often equivalent to accomplishing a cure.

To bring up a baby in a modern flat and do justice, especially if the child is the possessor of a full quota of proud relatives, makes a severe demand on the common sense and character of a young mother. On the other hand, a certain group of Spartan-souled young women, most of them college graduates, who, having studied all the wisdom of the medical men, refuse any one access to the baby, inevitably creating a family situation that leads to great unhappiness and very often to irreparable breaches. The saving grace of common sense must be invoked in this as in all other instances. Most relatives are willing to forego the pleasure of handling and kissing the baby, if they are allowed to see it resting happily in its crib. If the child is kept as it should be—in a well-ventilated room or on a porch apart from the usual living rooms of the house, it is a much easier matter to protect it from overattention.

Whenever possible, even in wintry weather, the baby should be outdoors several hours each day. The more delicate the baby, the greater its need for fresh air. Obviously, the infant must be kept warm. It is astonishing how sleepless, unhappy babies that have been kept in close rooms or overprotected porches will blossom out when they are put directly out in the open air. The modern perambulator in which so many babies are sent outdoors is often the means of rendering negative the doctor's intention in the matter of fresh air. An examination of one of these contrivances will frequently show a hood almost impervious to air, drawn down behind the baby, and a heavy curtain enclosing it in the front in such a way that the baby would get more air in a ten-by-twelve-foot room in a closed house. A simple box or basket on a stand, with a parasol or small awning so placed as to protect the child from glare, is much better than any wheeled baby carriage, for which there is no need except for the convenience of the mother or the nurse. There is advantage in doing away with the springed perambulator, for it removes the temptation to jiggle and bounce the infant—movements which tend to destroy the tranquillity and make the infant dissatisfied with quiet.

It is hardly possible for the young infant to sleep too much in the early months of life. Sixteen to eighteen hours of sleep is not excessive, although many babies are content to do well with from twelve to fourteen hours. After the sixth month, fourteen hours is enough, for now waking hours are necessary for the development of intellectual capacity through the reception and use or storage of sensory impressions. The hours of sleep, however, are as important for this development as are the waking hours; for, unless proper rest is had, the nervous system becomes overresponsive to stimuli and in this way develops irreparable instability. All social or household habits that infringe on the child's rightful hours of sleep are to be discouraged, although, in some instances, their cessation may work an apparent hardship on the parents, especially the father. Too often, sleeplessness and night terrors can be traced to the perfectly natural desire on the part of the father to romp with his baby after his return home in the evenings. A reasonable association at a reasonable hour is to be encouraged; but excessive handling of the baby and romping and other boisterous entertainment are harmful. In one infant such treatment may be tolerated, but in another it might be the cause of night terror or wakefulness.

The presence of the infant's bed in the living room, where the lights are lighted and the ordinary affairs of the household are passing, is another cause of bad sleeping habits. Through sheer weariness the child may fall asleep, but such sleep is likely to be superficial and the habit of easy wakefulness is encouraged. Another common household habit—keeping the child in the parents' bedroom, only to be awakened by the disturbance of their own retirement—may also be the cause of wakefulness at night. This is a problem difficult of solution for economic reasons, but it can usually be solved if the parents, interested in their baby's welfare, are reasonably careful. However, sometimes it will be necessary to provide a room adjacent to that of the parents' quarters, in which the child can sleep undisturbed.

It is a striking fact that the child who does not have sufficient daytime sleep sleeps badly at night. Many mothers attempt to improve the night's rest by keeping their babies awake during the day. This is a mistake, for the loss of day rest leads to overirritation of the nervous system, with the result that

the night sleep is neither so profound nor so restful as it should be. There is no better way of insuring quiet rest at night than to see that the child sleeps during the daytime in the open air. Many a child whosewakefulness has failed to respond to the bromides, or even to opiates, will sleep soundly when this simple measure is insisted upon.

A further encouragement to sleep may be found in the warm bath that may be given just before the child is put to bed. On the other hand, either a hot or a cold bath is stimulating and may keep the child awake. The sedative bath should be given at a temperature just below that of the body; say, about ninety-five degrees. For an infant, it should continue not over five or six minutes. Gentleness and a quiet environment during the process of the bath will often help to insure a good night's sleep.

Free ventilation at night and proper bedclothing, neither too much nor too little, will also be an aid in securing restful and invigorating sleep. The all too common habit of loading an infant down with bedclothing is to be discouraged. The old superstition that "cold" and "colds" are synonymous is still prevalent, and no individual suffers from this misconception so much as the helpless infant whose only means of protest is through restless kicking and crying, for which it is accused of having the "colic."

The "cathartic habit" is a fertile source of wakefulness. Many attacks of intestinal spasm in infants can be traced to insufficient doses of drugs, especially of milk of magnesia. But it is undoubtedly true that, when the child is constipated, if the stool has reached the rectum and lain there for some time without evacuation, it will produce distress that results in crying and the loss of sleep. This condition can easily be obviated by the injection of one to two tablespoonfuls of warm olive oil into the rectum, or the use of normal saline solution in the form of an enema. The institution of a rational dietary will be essential to prevent a recurrence of the disturbing constipation.

Wool or silk-and-wool underwear is very distressing to some skins, and undoubtedly plays a great part in producing uncomfortable, sleepless nights for the babies who wear this sort of clothing. The same statement may be made about the unnecessary, tightly rolled binder of flannel which people so often consider an essential part of the infant's clothing. The rubber diaper protector is a modern refinement which can only be condemned. It produces discomfort because it is irritating to the skin of the buttocks, and also because it prevents normal heat radiation. Soft mattresses stuffed with feathers or other such materials, down pillows or oversized pillows of any sort, may contribute to the loss of sleep by the facility with which the child becomes overheated; conversely, insufficient bedclothing may lead to chilling, especially of the hands and feet, and may result in a similar disquieting wakefulness.

The presence of adenoids may account for restless sleep and, in some instances, may be the cause of an intractable wakefulness. If the growth closes the pharyngeal end of the eustachean tube, earache, due to increasing pressure inside the tympanum, may become a source of restlessness. The natural remedy is to remove the adenoids. As a palliative, a few drops of warm glycerine may be instilled into the external meatus.

Bedtime stories are not an advantageous form of entertainment for any child, but, when children are old enough to listen, it is improbable that the mother, grandmother or nurse will entirely deny herself the pleasure of telling tales. Many childhood stories, originating in an age when child culture was little understood, especially those of highly tragic endings in which children so delight, must be interdicted whenever the physician is confronted by a case of insomnia or night terror. Oftentimes, a critical examination of the type of story told a child, whether at bedtime or during the day, will give a clue to the source of fright, which, stored in the subconscious mind, is released during sleep in the form of a nightmare. The remedy is obviously the omission of such stories and their replacement by some more kindly type of tale, of which there are many, especially devised for the infantile mind.

So obvious is the effect of diet, especially at the evening meal, on sleep and rest that little need be said, although in this respect the nervous infant sometimes presents a problem of immeasurable difficulty. The size of this meal seems to have definite effect, and with certain babies an overlarge feeding is a fertile source of restless sleep; yet it is equally true that hunger may break the routine of the night and lead to wakefulness. Each child must be studied as an individual and given the sort of meal best suited to its own requirements; most often, however, as soon as the baby is deprived of its voluminous bottle feeding just before bedtime, and is given a more concentrated meal, disturbances of sleep disappear and sleep becomes more refreshing. This is, by the way, just another good reason for the early abolition of bottle-feeding.

Our present public school system, with its ex-

tremely diversified program, is laying the foundation for a nation of neurotics. Schools and community centers are developing varsity representatives almost to the exclusion of the average child, thus aping the errors of the university and college systems. Such competition spells ruin to the child engaged therein, because it drives the child to the point of fatigue which is beyond the normal state of being healthily tired. The term "burned out" covers this group, but it does not in any way picture the unhappy future of these children. The almost universal school hours from 8:30 A.M. to 3:30 P.M. leave only the late afternoons for play, which, in winter, means little time, and that with a waning sun. Certain of our private schools arrange to complete their scholastic day by 2:00 P.M. The scholastic attainments of these children are as good as those of the public school group, and their physical condition is indeed much superior. We should have a shorter school day and fewer exhausting, competitive sports in the grades.

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Discussion

DR. R. C. HOOD (Clarksburg): This question of mental hygiene is a question which you will have to face sooner or later, whether you admit it or not. The thing that was forcibly brought to my mind by the late Dr. J. G. Pettit was when he said, at a meeting some years ago: "In designing the present tuberculosis sanatoria for the state, we had in mind the fact that, some day, tuberculosis might become an extinct disease; at that time, these hospitals or sanatoria to be converted to the purpose of taking care of mentally crippled or disturbed patients."

Our mental problem is growing by leaps and bounds. It is combined with the problem of delinquency. At the present time, as you know, the state reform school is overcrowded and we are having more of these problems to meet every day. They are problems of behavior, as Dr. Amick has so fittingly said, and start at a very early age.

There are just two things that he said that I would like to emphasize. I want to agree with Dr. Bond regarding this question of restless babies, starting up from a very early age, and the question of the overwrought child. Let me cite you one case: An only grandchild on both sides had generalized convulsions every Sunday morning over a period of several weeks. Careful physical examination failed to discover any physical cause for this condition, but the history showed that on Saturday night and Sunday morning both grandparents, two aunts and one uncle descended on that hapless child and entertained it to excess. Because of a doubtful history of epilepsy on one side of the family, they, of course, were greatly disturbed. To prove the cause of the disturbance, we had a very sensible old nurse come in and take complete charge of the child. The baby had no convulsions thereafter; no medicine or changes were made in the child's treatment except that. This was most disturbing, and I think you will agree with me that it is a thing that happens entirely too frequently.

The second point is that I want to side with both of these men regarding the stress of education nowadays. I have children who are broken down coming in all the time—burned out, shall we say, and overexhausted from the strain of education and so many sidelines. I have frequently found these children developing tics and all sorts of curious psychiatric and nervous disorders, which can be relieved by easing up on their schedules. The greatest place I find this is true is in junior high school. I know that, in our junior high school, there are students that are carrying from one to fourteen studies. In addition to that, they are playing in the school orchestra, running on the school track team, and taking part in the dramatics and everything else. They simply are old before their time, and are a bunch of nerves. We must meet this situation. I haven't any particular solution for the problem, aside from what has been developed here.

DR. RUSSELL BOND (Wheeling): Dr. Amick's paper is one of the few that I have heard recently or have read in the journals on this subject. There are very few papers written on what one might call mental hygiene in infancy. I think it is a very important part of a general practitioner's work, also of a pediatrician's work, to study babies from that angle. I would like to discuss one point especially that Dr. Amick brought up, and that is as to a baby's hunger. The only way a baby can tell us anything is by a cry. That may mean anything; for example, too many bedclothes or improper clothing; the baby may be constipated, or may have otitis media. After a careful physical examination we can rule out really any physical defect or some-

thing that is causing actual pain at that time. Hunger is one thing, I believe, that causes many restless and irritable babies.

In the hospital, pediatricians sometimes have the opportunity to take care of a baby as soon as it is born. The family wants a pediatrician to take care of a baby during its stay in the hospital, so that he will be familiar with the baby after it is home and probably during the next fifteen or sixteen years of its life. I think, in hospital care, one of the most important questions is to ask the nurse how much does the baby cry, because, the first or second night after the mother gets home from the hospital, you may get a call at three o'clock in the morning that the baby is crying. I always make it a point to find out how much a baby cries while in the hospital.

So often we see babies after they have been discharged from the hospital about the fourteenth day; see them the first or second night home and they are just screaming. The parents call up and say their baby has the colic. We go over the baby carefully and assure the family nothing is wrong; give the baby a little warm water to fill its stomach, or even give it one or two ounces of extra feeding. I think the majority of these babies, the first night or so, are really hungry, due to a specific cause. If the mother isn't fortunate enough to be able to take a special nurse home from the hospital, as soon as she gets home without help, she must attend to her household duties besides taking care of the new baby. I think it is a general rule that late in the afternoon the breast milk is much poorer in quality and not sufficient in amount; consequently, we get most of our restless babies from four in the afternoon until ten at night. I think most pediatricians get their crying babies between those hours, and we call those "hungry hours."

If a baby is permitted to go on, within three or four days the baby turns night into day; that is, the baby will scream all night and probably sleep all day. The father can't sleep and will be irritable the next day, and we find the family entirely upset. The baby goes on in a vicious circle, and we have a baby that is very difficult to get straightened out.

If the baby gets enough to eat in late afternoon and evening and is made comfortable and has its own room, with plenty of ventilation, we can start him off very nicely and usually take him right up to twelve or eighteen months without any trouble. The babies hard to handle are the ones that have been restless or irritable after four or five months, where the parents have not really understood the mental hygiene.

The gist of this paper is chiefly the education of parents on how to care for their baby. After all, it is part of the pediatrician's duty to assure them that the baby is all right, and just to follow out the simple procedures that will overcome their irritability.

The doctor's mention of tics and habit spasms in older children is another very common thing we see, and it is very distressing to the family. There is some question about it. Some say it is inherited if a brother or sister or the mother and father were ever that way. However, I think that one must go into the history of the case in detail and try to find some etiological factor. For instance, one child will imitate another. If the child has a facial tic, drawing up its face or shoulder in school, I am sure you will find three or four more trying to imitate that child, and later on you will have three or four more patients with the same thing.

The chief complaint we get is that the baby cries. That can often be overcome by taking the baby away from the mother or father or grandmother and having a nurse or neighbor take care of it. These babies certainly develop their willpower, and once they get the upper hand they are mighty hard to stop. If a stranger comes in and takes charge of the baby and masters the situation, being sure there are no physical reasons why the baby should have pain or cry, the difficulty is readily overcome.

It is really the education of the parents in the care of infants in the first year of life that is important, and I think that, after observing several babies in families who do follow your instructions, you will see the entire difference in the irritability and nervousness in older children.

OBSTRUCTION TO THE UPPER URINARY TRACT *

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Today the ureter ranks as one of the important organs of the body because of our increasing recognition of the frequency of ureteral obstruction and the important bearing these obstructions have on renal drainage. One of the most marked characteristics of diseases of the urinary system is the occurrence, primarily or secondarily, of some type of obstruction to the urinary outflow. No matter whether the disease itself is largely genital or urinary, with obstruction infection is always imminent.

* Read before the Eastern Panhandle Medical Society, Berkeley Springs, West Virginia, June 11, 1930.

The obstruction, with its complications and injury, is, as a rule, much more serious than the disease itself.

Pathology.—Renal changes are similar, irrespective of the place of obstruction to the urinary outlet. The place of obstruction, however, causes marked differences with respect to other back-pressure changes. With ureteral or uretero-pelvic block the ureter and the kidney are the primary organs affected. A slowing up of the outflow eventually leads to infection, to stone formation, or to a hydronephrosis with a permanently damaged kidney.

Etiology.—Conditions causing obstruction to the ureter may be either congenital or acquired.

Congenital anomalies, such as strictures, valve and atresia, are conditions difficult of recognition; but, judging from reports in the literature, they are worthy of careful consideration.

Gerard, in 1908, in an anatomical study of the ureter in the fœtus and the new-born, showed that the fœtal ureter is relatively enormous as compared to the kidney and the size of the body, and that it is frequently the seat of kinks and valvelike formations. Normally, these kinks and valves disappear shortly after birth, but in some cases their continuation will offer the only explanation of a given hydronephrosis.

Anomalous vessels entering into the blood supply of the kidney as an etiological factor is doubtful. Mayo, Braasch and McCarty have reported twenty of twenty-seven cases of hydronephrosis as due to anomalous vessels. Pannet, 1922, suggested that the abnormal artery to the lower pole of the kidney is such a subordinate factor that it should not be included in the list of causes. Geraghty and Frantz point out that there are cases of hydronephrosis uncured by division of anomalous vessels which are apparently responsible, and that improvement after such operations may be due to post-operative scar formation, with fixation of a movable kidney.

Anomalies of division of the ureters, as double complete and incomplete, are given as factors of obstruction.

Among the acquired conditions causing obstruction of the ureter are stone, stricture resulting from pelvic inflammatory disease, valves and folds in a tortous hydroureter, kinks or angulation from bands of adhesions. Pressure from outside in cases of pregnancy, pelvic tumors, etc., uretero-pelvic condtions from ptosis of the kidney, resulting in valve, kink, fold or stricture; trauma, or any condition causing abnormal mobility of the kidney or scar formation about the ureter may cause obstruction.

Any comparison of different series of cases will show a variation according to the preponderance of men, women and children in the series. Kelly, discussing only upper-tract causes in his experience with female urology at Hopkins, places abnormal mobility as the most common single cause of hydronephrosis. Young, in his experience with male urology at Hopkins, cites 122 supravesical cases of hydronephrosis, in twenty-two of which the condition was bilateral, and due to stone fifteen times (renal, nine; ureteral, six), stricture twenty-seven times, and movable kidney with aberrant vessels only twice. Of the 100 unilateral supravesical obstructions, calculi were found in thirty-nine (renal, twenty-four; ureteral, fifteen); ureteral stricture in forty-six, movable kidney in four, and no cause in nine.

There is a marked individual variability in the interpretation of findings, so that the same case may be regarded by one urologist as due to stricture, by another as due to movability, and by a third to aberrant vessels or kinks. The difference will arise largely from the particular differences in the methods of diagnosis that are used; unfortunately, there is no recognized standard.

A series of 35 cases which were recently cystoscoped, taken in order, showed eleven males and twenty-four females, eleven of which showed stricture of the right ureter (three males, eight females); four showed stricture of left ureter (one male, three females); three showed obstruction from external pressure of pregnancy; three showed kink of right ureter from ptosis of kidney (one male, two females); two showed double ureter right side, one complete and one incomplete, both female; one showed tuberculosis of left kidney (male); three showed stone in kidney (one right, male; two left, both females); three showed stone in ureter (one right, male; two left, females); two showed trigonitis from back pressure of right meatus and urethra; two showed nothing, the pain disappearing, however, following examination. Eleven of the strictures on the right side were low down, two in the upper end and one near the middle. Of the four strictures in the left side, three were low down and one in the upper end of the ureter.

Symptomatology.—The symptoms of ureteral obstructions vary according to the etiological factor, the severity of the condition, and the presence or absence of complications. Checking from my series, I find that twenty-three complained of pain in the

abdomen and side; eight complained of pain in the back; nine complained of bladder irritation, pain, urgency, and frequency; eight complained of indigestion, fullness, nausea, and constipation, and three complained of pain in back and side which radiated to the bladder.

Three of these cases had been operated for pain in the abdomen which was diagnosed as chronic appendicitis and no relief followed operation. Two cases were sent in with a diagnosis of gallstones; four with diagnosis of chronic appendicitis, and two had been treated for stomach trouble for years.

The pain in the side and back that these patients complain of is described by them as a dull ache, a full feeling as though there was a swelling in the side, a burning sensation near the navel. In the presence of stone they may complain of sudden, sharp, lancinating pain in the back, radiating from the kidney down the line of the ureter to the bladder or down the thigh, nausea and vomiting, and the pain may be severe enough to require morphia. In pyelitis they may complain of soreness in the back, chills, fever, and painful and frequent urination.

Diagnosis.—One obtains presumptive evidence from the history. Physical examination usually furnishes helpful data for diagnosis. In the patient presenting symptoms due to ureteral stricture, one often finds six areas of tenderness instead of only one, as in cholecystitis or appendicitis. In women the right kidney is usually palpable, and it is often tender if stricture exists. The left kidney may or may not be palpable, but an attempt to feel it often elicits tenderness deep down in the flank. Usually the ureters are tender along their entire course, and the four areas most available for palpation are the points where they cross the pelvic brim on each side of the sacral promontory and the broad ligament areas just beside and slightly anterior to the cervix.

Legge has called attention to the frequency with which ureteral tenderness is elicited on pressure over a point situated a finger's breadth laterally from the umbilicus. Next to Morris's points, where the ureters dip over into the pelvis, Legg's points are the most suitable areas for making pressure over the abdominal ureter, and in some patients one finds greater tenderness on palpation over Legg's point than over Morris's point. If the tenderness is found only at Morris's point and not in the kidney or broad ligament regions, one should be strongly suspicious of an orthopedic condition rather than a urologic condition, for pressure here bears on the anterior aspect of the sacro-iliac point.

Muscular rigidity is present over the lower abdomen in a great many of the cases.

Analysis of the physical findings in the thirty-five cases is as follows: Twenty cases showed a tender ureteral point (Legge); sixteen cases showed muscular rigidity of lower abdomen; twenty-five cases showed tenderness over the kidney on the involved side.

Very little information is obtained from the urinalysis in a large number of the cases. During the descent of a stone one is apt to find abundant red blood cells. A stone impacted may show very few white or red cells. Cases of pyelitis will show clumped pus cells unless the ureter is plugged by pus, and, if this occurs, the patient will show a much higher elevation of temperature. Voided urine from twenty-eight of the thirty-five cases showed nineteen cases negative; nine cases showed pus in varying amounts.

Having completed the examination up to this point, the next study is made with the cystoscope and ureteral catheter. Two methods are now used—the dry direct vision through the Kelly cystoscope, and the water method with the indirect vision cystoscope. The latter method gives a much clearer view of the interior of the bladder, and is the most widely used method. The Kelly method has proved very satisfactory in the hands of Dr. Hunner, as greater dilatation of ureters is possible through the Kelly cystoscope. This method, however, is applicable only to the female with any degree of satisfaction.

The use of the waxed bulb, as practiced by Dr. Hunner, brings up a disputable point with respect to the recognition of stricture, he claiming that it is the hang of the bulb, only possible of recognition with the open-air endoscope of Kelly, that is pathognomonic of ureteral stricture. There is a great deal of doubt as to the best method of recognition of ureteral strictures, for not every one is willing to accept the finding of a hang in withdrawal of a bulb as pathognomonic, as this sensation is as readily obtained with ureteral spasm; also, very few are willing to accept the ureterogram as positive proof, even though it shows a definite constriction which sometimes may be repeatedly obtained in the same place and yet be due to spasm. There are many so-called ureteral strictures in which ureteral dilatation alone is not demonstrable—a condition which many consider as impossible with true strictures. There are, no doubt, many conditions of periureteral inflammation in which the ureter is hypersensitive,

though not strictured. The passage of a bulb reproduces pain, but true stricture is not present.

In the thirty-five cases reported a combined technique was used. The cystoscope was passed into the bladder and the urine withdrawn, and a specimen was taken for routine examination and culture. The bladder was then filled with water until the patient began to feel uncomfortable. The interior of the bladder was then examined, the ureteral orifices located, and a No. 7 catheter was then passed into the ureter about one inch on the side that was causing symptoms. Specimens were then collected for routine examination and culture. The patient was then prepared for pyelogram, a twenty-five per cent solution of sodium bromide being allowed to run in through the catheter and up to the kidney pelvis until the patient began to complain of fullness in the side or back; the x-ray was then made and the plate developed. By that time the routine laboratory report on the urine had been obtained. The catheter was passed up to the kidney pelvis in search of obstruction.

Treatment.—Pyelitis was treated by dilatation of the stricture, placing an indwelling catheter, and, twice daily, pelvic lavage of 5 c.c. of 1:5,000 silver nitrate until temperature was normal, urine free from pus, and culture sterile, alternating medication of alkali and urotropin with acid sodium phosphate by mouth.

Stone in ureter: As large a cather as possible was passed up to point of impaction, sterile oil injected, and catheter left in a short while. Repeated x-ray examination was done to see if stone was descending, and repeated catheterization was often necessary.

Stricture: Beginning with the smallest size catheter that would pass, gradually increasing the size, the catheters were left in one to two hours. Catheterization was repeated every few weeks until full dilatation was obtained and all symptoms disappeared.

Kinks: Treated by dilatation and postural treatment in bed, with applications of kidney support.

Patients with stricture often have a great deal of pain immediately following first dilatation; then they are almost free of symptoms.

Stones: Unimpacted stones, if not too large, can be made to descend completely or in reach of operative forceps.

Pyelitis: Clears up rapidly under direct lavage.

In thirteen cases, all symptoms disappeared following first dilatation; in seven cases all symptoms cleared up after second dilatation; in two cases three dilatations were required; in one case, four dilatations; in two cases of stone in the ureter, the stone passed after second dilatation.

ORAL FOCAL INFECTION *

By D. C. CLARK, D.D.S.
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Oral focal infection is a subject of such magnitude and importance that it is impossible to do it justice in this short paper. However, its very magnitude permits one to pick out the important points and present them in such a manner that the interdependence of our two great professions may be appreciated. It is, therefore, most essential that in focal infection the dentist consult the physician as to the presence of other possible foci of infection, while it is just as essential for the physician to consult the dentist about the presence or absence of oral foci of infection.

With this brief introduction I shall, first, set forth a procedure for dental diagnosis in cases of infection:

1. A thorough medical history is obtained.
2. Data on blood-pressure, a complete differential blood count, Wassermann reaction, and urinalysis are obtained through the physician or laboratory.
3. A thorough clinical examination is made of the teeth, gums, and sinuses.
4. An x-ray examination is made of the teeth and sinuses.
5. Each tooth is eliminated as a possible source of infection.
6. As nearly as possible, the date when each tooth was filled and crowned should be known to the dentist, as there is generally a definite period between the time the tooth becomes infected and the first expression of systemic sequelæ.

We may summarize oral focal infection with the following points:

1. A thorough knowledge of the anatomy, especially of the bony structure of the jaws in health and in disease, is necessary to understand the changes that take place in the presence of focal infection.
2. Chronic periapical infection may either be associated with condensation of bone and encapsulation or with absorption and localized extension of the infection.
3. Small encapsulated infections are more likely to be associated with systematic involvement.
4. Large, diffuse infections are associated with

* Read before the Monongalia County Medical Society at Morgantown, West Virginia.

bone absorption, and extend locally rather than by the blood stream and lymph channels to remote parts of the body.

5. Bone absorption occurs only in the presence of living cells and an abundant blood supply.

6. Chronic encapsulated perapical infections have a very definite histologic structure.

7. Infections associated with absorption are easily disseminated by poorly chosen operative procedure.

8. Dental infections are frequently secondary to other foci of infection.

9. Laboratory examination may be a helpful procedure in the diagnosis of focal infection, but blood-cell counts, blood serum tests, blood chemical examination, and x-ray pictures are all sometimes fallible.

10. Diagnosis is an individual process of deduction.

Systemic manifestation of oral focal infection may occur in the form of many common diseases—some of them, in fact, so common that they are overlooked as cases which might possibly be caused by an oral focus of infection. The following are some of the diseases that may be caused by oral foci:

Arthritis: The damage from this disease extends from a slight impairment of function to absolute crippling, so that it is very important to remove any possible foci as early as possible.

Traumatic arthritis: There is usually the history of injury followed by symptoms. Usually there is an oral focus of infection. The injury lowers the resistance enough for active infection to show up.

Acute rheumatic fever: An oral focus is usual, but most often of tonsillar origin.

Rheumatism: Some authorities claim as high as eighty per cent of the cases are caused by oral foci of infection. By far the most common dental cause is pyorrhea; in fact, the two occur together so much that sometimes one wonders whether pyorrhea causes rheumatism or rheumatism causes pyorrhea.

Chorea: A large percentage of the cases have foci of dental origin.

Neuralgic conditions: Often met with in chronic focal infections. The history is usually one of several years' standing, with the attacks irregular. The symptoms sometimes shift from one part of the body to another. The damage is seldom extensive, so that usually the recovery is rapid when the focus is removed. The exception to this is when the greater sciatic nerve is involved. In this case there is often a true neuritis and the recovery is slow.

Subdeltoid bursitis is always infectious, but is sometimes precipitated by trauma.

Non-specific aortitis, with or without chronic myocarditis, is often caused by oral foci.

Secondary anemia is a common finding in chronic infection.

The primary lesion of subacute bacterial endocarditis can often be found in the oral cavity.

It is generally accepted that there is a relationship between bronchial asthma and infection in the mouth.

Pyelitis and cystitis can frequently be traced to an oral focus.

Prostatitis which is non-specific in origin is usually secondary to a distant focus.

There has never been a definite relationship established between focal infection and toxic goiter, but it seems possible that the removal of all foci of infection in the mouth might have a tendency to lessen its occurrence.

Infections have a predilection, among neurotics, for the centra lnervous system.

Many times, post-operative infections are caused by a distant focus of infection. A surgeon might look for a break in his technique when the trouble may have been caused by a mouth infection. A patient's mouth should receive as careful pre-operative attention as the heart and lungs. What good does it do to keep the operative field sterile when the blood may bring in infection from a chronic alveolar abscess or a bad case of pyorrhea that has been overlooked? Every operative patient should have a thorough routine examination of the oral cavity, so that any oral foci may be removed.

These chronic infections may play an important part in the diabetic patient, sometimes producing complications and sometimes being causative. A chronic infection will lessen the carbohydrate tolerance so that the patient may fail to gain his strength in spite of the best treatment.

Massive gastric and enteric hemorrhage with an undemonstrable lesion is apparently often due to an oral focus.

Gastric or duodenal ulcer and gallbladder disease unquestionably often have their origin in mouth infections.

Even from the above incomplete list of systemic disturbances, it is easy for one to see the importance of the elimination of oral foci of infection. Statistics show that the tonsils are more frequently the original focus of infection, but, on the other hand, there are but two tonsils, while there are thirty-two teeth, to say nothing of the gums and salivary glands, which are subject to many infectious diseases.

It is very evident that the dental consultant should be well trained in oral diagnosis. He should be keenly aware of the danger of systemic diseases through mouth infection, should know the oral cavity thoroughly in health and in disease, and should be able to take good röntgenograms and interpret them. Too often a physician refers his patient to a dentist who sticks a mouth mirror and an explorer into the patient's mouth and gives the patient a clean bill of health because there are no cavities, instead of exhausting all methods of diagnosis as he should. On the other hand, all too often the physician tells the patient to get all his teeth out, when a single tooth may be the cause of all the trouble and the rest of the teeth vital, perfectly healthy, and invaluable to the patient. There should be more coöperation between the physician and the dentist. The physician should have a dental consultant in whom he has perfect confidence and from whom he demands full responsibility for the condition of the patient's oral cavity. The dentist in turn should make every effort to find and eliminate every possible focus of infection. In some hospitals every incoming patient has a thorough oral examination. This may not be necessary for every patient, but every patient that is to be operated on should have every focus of infection removed, if possible, before being placed on the operating table.

The hospital offers the best opportunity for intelligent coöperation between the physician and dentist. Every hospital should have a dentist on its staff—one who is thoroughly aware of the responsibility that rests with him for the removal of oral foci and who is thoroughly competent to diagnose and eradicate them.

In conclusion, let us hope that the near future will bring rapid advancement in the locating and control of focal infection, and that our two professions will jointly carry on this good work.

PELLAGRA *

By W. V. WILKERSON, M.Sc., M.D.
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In 1725, Casal, physician to Philip V of Spain, studied a group of patients with skin lesions which he regarded as a peculiar type of leprosy. He apparently told contemporary physicians of his observations, but his written description did not appear until 1762, three years after his death. In 1771, Frapolli, of Milan, Italy, reported the condition as present in his home city, and designated it as "pellagra." Since that time the disease has been reported as occurring in nearly every country in Europe, in Northern, Central and South Africa, in India, Straits Settlements, China, Japan, Australia, Hawaii, some parts of South America, Panama, Central America, Mexico, the United States, Canada, and the West Indies.

The first report of a sporadic case in the Western Hemisphere appears to be that of Gray, who reported a case from Utica, New York, in 1864. Its endemic occurrence in the Western Hemisphere was not demonstrated until 1896, when Vales published his studies of pellagra in Yucatan, Mexico. It was not recognized as an endemic disease in the United States until 1907, when Searcy reported an outbreak of 88 cases that had occurred in 1906 at the Mount Vernon, Alabama, Insane Hospital. Since that time, cases have been reported from nearly every state in the United States, although the northern and western parts of the country have relatively few cases.

Despite the literature, it appears to be the common opinion that pellagra is limited to the far southern states. The first case of pellagra that I ever saw (Johns Hopkins Hospital) was a young man from Greenbrier county, West Virginia, who presented all the classical symptoms and who stated there were four or five other people in his community whose conditon appeared to him to be like his own.

In the three months that I have been in Montgomery I have seen two cases of pellagra, which is the reason the subject is now being reviewed.

Etiology.—A large literature has appeared which deals exclusively or incidentally with the etiology of pellagra. Unfortunately, a large part of this literature is controversial.

It was early suggested that bad food was the responsible factor, and this view was formulated into a specific hypothesis by Marzari (1810), who regarded corn or maize in the diet as the cause of the disease. This view gained general acceptance. Various explanations of the *modus operandi* of maize in producing pellagra were advanced, one of the most interesting being that of Lussana and Frua (1856), who believed pellagra to be due to "an insufficent neuromuscular repair due to a deficiency of protein in maize." When it was demonstrated that corn compares favorably with other cereals in protein content, some other explanation was necessary. The new explanation was a modified "corn theory," which stated that pellagra was due to the

* Read before the staff of the Coal Valley Hospital at regular weekly meeting August 6, 1930.

ingestion of spoiled corn and was the result of toxico-chemical substances developed in corn as a result of the action of microörganisms which are themselves harmless to man. This new "corn theory" became so firmly entrenched that it was the basis for prophylactic measures adopted by the Italian and Austrian governments.

There has been one fatal weakness in the various theories associating pellagra with corn as the etiological factor, namely: there have been numerous well-authenticated cases where corn formed no part of the diet.

Of the numerous other theories that have been advanced as to the etiology of pellagra, there are two that have enough data back of them to merit our serious consideration, namely: (*a*) pellagra is an infectious disease, and (*b*) pellagra is a deficiency disease.

The infectious theory is supported by (*a*) the fact that there is evidence of close association with a pre-existing case in a high percentage of cases; (*b*) evidence that it is frequently associated with insanitary conditions, and that the disease may be controlled by improved sanitary conditions; (*c*) its occurrence in the well-to-do, where diet is presumably adequate; (*d*) the seasonal character of the disease; (*e*) higher incidence in women than in men; (*f*) its seemingly abrupt appearance, rapid extension, and progressive increase in the United States.

The principal reasons for considering pellagra as of dietary origin are: (*a*) Active cases of pellagra respond promptly and strikingly to an appropriate diet, and the condition can be completely prevented by a suitable diet without changng any other factors, hygienic or sanitary; (*b*) attendants at the hospitals for the treatment of pellagra practically never contract the disease; (*c*) attempts to produce the disease in man by all kinds of inoculation and feeding experiments have been entirely unsuccessful; (*d*) Goldberger and Wheeler produced pellagra by feeding an inadequate diet to eleven convicts, six of whom developed the disease, while a large number of controls were unaffected.

Symptomatology.—With pellagra, like most other conditions, medical writers have been unable to refrain from dividing the disease into stages, such as pre-eruptive, eruptive, cachectic, etc. It seems much preferable to recognize that we are dealing with a continuous process which presents different pictures at different times.

A diminution of strength is one of the earliest and most constant of all the signs and symptoms of pellagra, although it may be so gradual that the patient is unaware of it. A loss of weight is an almost constant finding, although this also may be unknown to the patient.

With the weight loss and growing weakness, there frequently appear various nervous manifestations, such as headache, disturbed sleep, or, at times, insomnia, nervousness, neuralgia-like pains, and paræsthesias.

Symptoms of indigestion, such as gaseous or acid eructations, discomfort after eating, and epigastric pain are frequent and early in adults, though rare in children. The appetite becomes sometimes capricious, but ordinarily is not changed enough to be suggestive. It is generally believed that diarrhea is a common symptom in pellagra, but the belief is not in accord with facts, for the bowels are either normal or there is a mild constipation, irregular movement or looseness being present in only a small percentage of cases.

After a variable time, a sensation of burning appears in the mouth, with or without redness, and when redness is present it usually affects first the tip, or the tip and margins, of the tongue; less frequently the buccal mucous membrane is involved. In a few cases there is a burning sensation from the tip of the tongue to the anus as though the entire gastrointestinal tract were "raw."

After an irregular period of time, during which some or all of the above symptoms have been present, a characteristic eruption usually appears. This eruption ordinarily begins as an erythema which may be transient but which commonly persists for several days. The affected skin next becomes roughened by the formation of epidermal scales which, with varying rapidity, become loosened and detached. Sometimes there is a mealy desquamation instead of this scab formation. The process generally begins at or near the center of the affected area and progresses toward the periphery, where a sharply limited, keratosed fringe clearly delimits the affected area from the normal skin.

The eruption may affect almost any part of the body surface, but its favorite sites are (*a*) the back of hands and dorsal surface of the feet, (*b*) extensor surfaces of the forearms, (*c*) the neck and the face. Less frequent sites are the elbows, knees, arms, and genitalia. Still less frequently the palms of the hands, soles of the feet, and peri-anal region are involved. Very rarely the skin over the spinal

vertebræ, the scapular region, the axilla, popliteal surfaces, the abdominal surface, and the scalp may be affected.

Perhaps the most striking peculiarity of the eruption of pellagra is its tendency to appear about the same time of the year and to involve similar areas, both as to extent and peculiairties of outline on both sides of the body. This does not always occur, however, for proved cases of pellagra are on record where the lesions never appeared except on one side of the body, and many asymmetrical cases have been studied. Sometimes there is a diffuse, generalized pigmentation resembling that of Addison's disease or the appearance of the skin of primary pernicious anemia.

It has long been taugth that pellagra attacks parts of the body not protected by the clothing, the inference being very obvious that the clothing is an important factor in determining this distribution; but studies made among tribes who wear practically no clothing showed the same distribution as found among civilized races.

The seasonal nature of pellagra has already been referred to. Nearly all cases in the United States appear during late spring or early summer, and clear up in the late fall.

Pellagra patients, like those suffering from any chronic diseases, may develop complications such as suppurative or ulcerative processes, bed sores, etc., or coincidental complications that are not related to pellagra.

As sequelæ, these patients sometimes have pigmentation of the affected areas which persists for years, and atrophy of the affected areas occasionally follows severe attacks. More important are some of the nervous manifestations, such as vertigo, burning of the hands and feet, and mental disturbances which in rare instances may be permanent.

Treatment.—Treatment is prophylactic and curative. A well-balanced diet, rich in milk, fresh meats, plenty of vegetables, and with a high vitamin *B* content, will prevent the development of pellagra and will effect a cure in active cases.

Prognosis.—Complete data is not available. One extensive series of reports from a far southern state gave a mortality report of ten per cent. This is undoubtedly too high when applied to the whole United States, but it does serve to emphasize the fact that, without proper treatment, pellagra doe carry a mortality rate—a fact to be remembered, since the disease is endemic in West Virginia.

THE RECTAL ADMINISTRATION OF DIGITALIS *

By EDWARD PODOLSKY, M.D.
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It sometimes becomes necessary to administer digitalis rectally for various reasons. Among these the three most prominent ones may be mentioned as follows:

1. In cases of unfavorable position of the cutaneous veins, small size, and in severe edema.

2. In cases where there is danger of thrombosis and embolism.

3. In very protracted hepatic congestion, in cases in which one can not give intravenous injections continuously for external reasons. It has also been observed in very rare cases of severe congestion, the rectal method of administration is occasionally more effective than the intravenous method of administration. Any one who has treated a large number of heart cases will probably recall one or two with extensive edema and enormous enlargement of the liver, due to mitral defect, in which, after every puncture, there is a hemorrhage of the powerfully engorged veins into the surrounding area, so that the intravenous injection was of little value. Usually a patient of this kind will not tolerate digitalis by mouth. The only solution is by rectal administration.

Rectal administration of digitalis was introduced prior to the intravenous administration of this drug. This mode of administration was utilized when the oral method gave rise to vomiting. These first attempts were carried out with either the diluted tincture of digitalis or with the infusion. The results obtained were not very satisfactory. The reason was that these preparations irritated the mucous membrane of the rectum and could not be retained for absorption. When the tincture was diluted to the point where its irritating properties disappeared, its volume was too large for the purposes in mind. The solution, because of its bulk, was often expelled.

Those who have used the rectal method of administering digitalis have found that it has much in common with the intravenous method, and that results may be obtained with it in cases in which the per-oral method is without results. This is not only the case when digitalis produces nausea, but especially in cases in which it is borne well by mouth, but in which no effect manifests itself. According to Cleotta, it is probable that the favorable results obtained from the rectal administration of digitalis

* Original paper.

are due to the fact that the blood from the inferior and middle hemorrhoidal veins leading from the rectum goes directly into the inferior vena cava and thence to the heart.

Digitalis may be given rectally with effect in various forms. The patient must always receive a preliminary cleansing enema. After evacuaton, from 8 to 20 c.c. of digitan is given by rectal tube and washed through with 25 c.c. of tapwater. A rectal tube of small caliber is inserted to a depth of about six inches from the anal orifice. The funnel into which the digitalis is poured is held about fifteen inches above the level of the anus. After the tapwater has been allowed to flow in, the tube is clamped, left *in situ* for fifteen minutes, and then slowly withdrawn. The patient is instructed to avoid bowel movement for at least six hours.

Another method of injecting digitan rectally, which some men have found convenient, is to use one cubic centimeter of the solution in 10 c.c. of water, which is injected into the rectum two or three times daily with a small glycerine syringe.

A digitalis mixture consisting of a gram of powdered leaves of digitalis, 50 c.c. of simple syrup, and 150 c.c. of water, has been preferred by some. A tablespoonful of this mixture is injected, diluted in a small quantity of warm water, preferably with a small rubber bulb so as to be retained as long as possible. This is repeated three times a day.

The most convenient and probably the most popular method of rectal administration of digitalis at the present time is in the form of suppositories. It has been found that the total dosage required for digitalization is identical with the amount required when the drug is given by mouth.

Before the suppositories are inserted the patient is to receive a preliminary cleansing enema of soapsuds. Wyckoff, in his cardiac work at Bellevue Hospital, gives for the first day a rectal suppository of four cat units (six grains) morning and night, making a total dosage of eight units or twelve grains. On the second day he gives one suppository of four units (six grains) in the morning; this may or may not be followed at night by a suppository of two units (three grains) or by a suppository of four units (six grains), depending upon the individual patient and upon clinical conditions, thus making a possible total dosage for the second day of four, six or eight units (six, nine or twelve grains). On the third and subsequent days he gives one suppository of two units (three grains).

An acquaintance with the rectal administration of digitalis is desirable, for there are occasions which may arise when only the rectal administration of this drug is possible or desirable.

CASE REPORTS

A PRELIMINARY REPORT OF 100 CONSECUTIVE APPENDECTOMIES WITHOUT A DEATH *

By BENJAMIN I. GOLDEN, M.D.
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It is quite gratifying for this clinic to make a preliminary report of one hundred consecutive appendectomies without a death. If we were situated in a metropolis or a state where every farmhouse is on good roads, we might feel that fortune favored us; but when we realize that the death rate from appendicitis in the United States ranges between eighteen and twenty-two per cent, and when we further realize that many of our patients are situated a great distance from medical aid and receive much home treatment before the family believes there is something more serious present than just the usual abdominal cramps, we believe this record is an outstanding one.

Recently the Mayo Clinic published a report of 172 appendectomies with a mortality rate of 2.9%, and makes the comment that many of these cases had the onset twenty-four to forty-eight hours prior to operation. We would all feel very happy if we were given the privilege of seeing our cases of appendicitis within forty-eight hours of the onset. Most of them are seen from the third to the fifth day, when the patient is almost moribund. In this particular report referred to there were twenty cases in which the appendix had ruptured. Of these, only twelve had the appendix removed at the first operation; the other eight had a second operation for removal of the appendix several weeks later. In this hospital, we have always removed the appendix at the first operation.

The one hundred cases are divided as follows: Inflammatory reaction beyond the appendiceal area, 19; walled-off abscess formation with gangrenous appendix, 2; carcinoma, 1; acute appendicitis, 15; sub-acute appendicitis, 27; gangrenous appendicitis, 18 (six of these had a general diffuse peritonitis); chronic appendicitis, 18.

Of the above cases, 22 had drainage, three had

* From the Bulletin of the Davis Memorial Hospital, Elkins, W. Va.

intestinal obstruction, and one had a stitch abscess. One case of general peritonitis had three subsequent operations to relieve pus pockets in other parts of the abdomen. There were 34 males and 66 females. There were 46 under the age of twenty, and 54 above twenty. The oldest was fifty-seven.

I would like to make a few comments from my observations of these cases. It has been our policy in the past to operate upon these cases immediately after admission to the hospital. During the past year, however, we have adopted what might be termed a delayed preoperative procedure, resorting to the old Ochsner method. During the interim from admission to operation, we attempt to fortify the patient against certain post-operative complications by increasing the body fluids, raising the blood chlorides and blood glucose. This has been done in the main by the intravenous use of glucose and saline, and for this reason we now feel it is much better to treat the patient for a short time prior to operation. Of late, most of our patients have been operated upon under spinal anesthesia, which, we believe, limits the danger of spreading infection. While one must always take for granted that good surgery makes for good results, we feel that this record would not have been attained were it not for good post-operative nursing.

In this hospital we have no routine. We treat each patient as an individual entity. Thus we believe we eliminate many of the disasters that come about through slipshod methods which is usually the result of too much routine. Because all post-operative urines are measured and examined, all vomitus is analyzed, and all stools are reported as well as charted, we believe this keeps the whole organization in contact with the patient and thus eliminates neglect.

We obtain a complete blood chemistry prior to operation. This gives us an anchor from which to work in case of post-operative complications. It is true that all of this requires a great deal of manpower and truthfully places an extra burden on the institution. However, it does not increase the financial burden of the patient, and we believe the results justify the energy expended.

In closing, I might add that this record is not complete. Our mortality percentage for appendicitis is still zero, and in the near future we hope to give a further report.

TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association.

What Is a Preventorium?

The term *preventorium* was first used to designate a convalescent home for adults (Brehmer's Rest at Ste. Agathe des Monts in Canada), on the ground that any depleting illness may predispose to tuberculosis and that after-care tended to prevent tuberculosis.

In 1909, New York City, through the interest of Dr. Alfred Hess, established at Farmingdale, N. J., an institution to take care of "pre-tuberculous" children. It was called a preventorium. Unlike the Canadian institution, which was designed for convalescent adults, that at Farmingdale was exclusively for children presumably threatened with tuberculosis. Similar institutions sprang up, though practices and procedures were not uniform.

Ideas as to what the preventorium was supposed to be and do were vague. However, the dominating purpose of all was a desire to provide care for the sick child. The term *pre-tuberculous* was applied rather loosely to the child with actual tuberculosis, the child of a tuberculous household, and the child below par in health, as expressed usually in malnutrition; but all were regarded as sick children.

Quite another development in these early days was the establishment of fresh-air schools and open-window rooms. Their purpose was to increase the resistance of certain selected persons who were not sick but who were presumed to be potential victims of tuberculosis. The emphasis was on health building rather than on disease prevention.

As we learned to differentiate between infection, mass infection, and actual disease, and as it became evident that the beneficial results of both preventoria and fresh-air schools were to be attributed to rest, good nutrition, and a well-regulated regimen, the procedures and objectives of both types of institutions tended to merge. For that reason, it is today impossible to answer statistically how many preventoria and fresh-air schools there are in the United States.

Three years ago, the Committee on Preventoria of the National Tuberculosis Association formulated this definition: "A preventorium is a twenty-four-hour, twelve-months institution for the care and observation of children substandard in health." The

general purpose of this institution was assumed to be giving preventive care to children threatened with tuberculosis, heart disease, or other potential disability. Exact standards of eligibility were not defined, but the committee indicated the groups from which selections for the preventorium might be made, as follows:

1. Children exposed to tuberculosis at home, or in whose immediate family there has been a recent death from tuberculosis.

2. Children who have had tuberculosis, whose lesions are not active, and who appear to be in need of further care and observation.

3. Children suffering from malnutrition.

4. Children who tire easily and who are unable to carry on their class work.

5. Children frequently absent because of colds, bronchitis, etc.

6. Children suffering from rheumatic heart disease (of certain classifications).

It is now recognized that many children who need protective care do not require the exacting regimen furnished by a twenty-four-hour, highly specialized preventorium. Some preventoria assume complete charge of their children, keeping them for twenty-four hours of the day the year round until they have apparently developed good resistance, while others permit their charges to return home over the week-end. The predominating purpose of these institutions is to give medical care, and, secondly, to provide school instruction. Another type of preventorium is essentially a school which cares for the children only during school hours and which furnishes supplementary meals, rest periods during the day, etc., while, in the meantime, conditions in the children's homes are scrutinized and supervised by a special follow-up worker.

While preventoria, fresh-air schools, open-window classrooms, nutrition classes, and health camps vary widely in their procedures, the main purpose of all seems to be to give handicapped children an extra lift so as to prevent the threatened disaster of pulmonary tuberculosis in later years. Opinion in the main seems to be that children with the childhood type of tuberculosis (unless progressive) should not be regarded as sick children, but rather as being threatened with disease. Certainly, children with the adult type of pulmonary tuberculosis should not be in the preventorium, not only because they are definitely ill, but also because they are potential spreaders of the disease.

There would be less confusion of thought about preventoria were discussions concerned not so much with building construction, physical equipment, staff, etc., but with the therapeutic requirements of children who need protective care. Indications for treatment of such children are:

1. Contact with the tuberculous adult, who presumably has infected the child, must be broken. This is done by removing the tuberculous adult to a sanatorium, by taking the child out of the home, or by teaching every member of the household the principles underlying the transmission of tuberculosis.

2. The child must be relieved of all possible strain (*i.e.*, strenuous exercise and burdensome school work). Rest is the cornerstone on which preventorium care is based.

3. The child's health must be built up; physical defects must be corrected and the benefits of good food, sunshine, and fresh air must be made available.

4. The psychology of the child must be adjusted so that he will not think of himself as being inferior to others gifted with greater reserve of physique, and yet restrain over-ambitious impulses.

These indications for treatment can, under ordinary circumstances, be met without the aid of a definite institution; but there are, of course, numerous "problem families," as the social worker calls them, where it is impossible to meet the requirements enumerated above. These problem families are not limited to the poor or ignorant, but include many families of intelligence and of means who, for any reason, are unable to afford the child the necessary protection.

While no formula can be given for the solution of the problem, an understanding of the general principles should enable any community to determine the type of preventorium care which best suits its needs. The various attempts now being made to cope with the problem should be regarded as experiments. The test of time will reveal which type of preventorium is the most efficient. Fortunately, a number of preventorium institutions are carefully following their pupils into adult life in order to learn what their subsequent experiences may be. When enough of such data has been collected, we may be able to determine more precisely what the ideal form of organized care may be.—H. E. KLEINSCHMIDT, *Journal of Public Health*, July, 1930.

THE WEST VIRGINIA MEDICAL JOURNAL

JAMES R. BLOSS, EDITOR-IN-CHIEF . . HUNTINGTON

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PRESIDENT'S PAGE

THERE is now being mailed to each member of the State Association a questionnaire calling for certain information which, when assembled and correlated, will be of inestimable value to the profession of West Virginia and, for that matter, to the general medical profession. Inventories are an absolute necessity in business, and an inventory of a great profession must prove of marked benefit to the individual members of that profession. What are we doing? Are we adequately paid for our work? How much charity service do we contribute to the welfare of the state? These questions can be answered, and answered accurately, if each member will return his questionnaire properly filled in. Every precaution has been taken to preserve as private and confidential the information furnished, so that even Mr. Savage will be unable to tell who gives the statistics on any individual sheet.

So far as your president knows, this effort to evaluate the profession of our state is an innovation in medical economics. The information gleaned can not fail to be worth while to us as individuals, of great benefit to the State Association as an organized body, and of inestimable value to our legislative committee in planning and securing the enactment of future legislation.

Please fill in your questionnaire and mail promptly.

Walter E. West

President.

EDITORIAL

What Is Your Net Income?

Within the next week or ten days every member of the West Virginia State Medical Association will receive a questionnaire from the Association headquarters. The questionnaire will relate to the practice of medicine in this state and will seek to find out, among other things, the gross and net income, the amount of charity work, the type of practice, and the percentage of collections of every member in the state. In order to assure every member that the information will be strictly confidential and secret, the usual signature line has been purposely left off the questionnaire and it will not be necessary to sign the questionnaire when it is returned to this office. In other words, it will be sent out and returned as a "secret ballot."

It becomes apparent at once that the information obtained by this survey will be unusually valuable; but the success of the survey itself depends upon the individual coöperation of every member of the Association in West Virginia. For the convenience of the doctor receiving the questionnaire, a stamped, self-addressed return envelope is enclosed. The actual questionnaire is quite simple and the questions asked should be answered with little difficulty. In cases where the exact data is not readily available, the members are requested to set down the facts and figures to the best of their knowledge.

The results of this survey will be published in the WEST VIRGINIA MEDICAL JOURNAL as one of the first contributions of its kind ever presented on the subject of medical economics in this state. The information will also, in all probability, find its way into the lay press of the state. The chief purpose of the survey, however, is to gather all possible facts relating to medical economics and to have these facts available when the legislature convenes next January.

Official Automobile Emblems

The West Virginia State Medical Association, under authority given by the house of delegates at White Sulphur Springs last May, now has an official automobile emblem for all members. This official emblem is made from the same pattern as the A. M. A. emblem, but in addition has the name of the state association moulded into a heavy gold band around the outside of the insignia. The Association recently ordered one hundred of these emblems, and there are still a few for sale in the office of the executive secretary. The emblems sell for two dollars each and are registered both with the Association and with the West Virginia state police. Any member of the Association desiring one of these emblems can secure the same by sending a check for two dollars to the West Virginia State Medical Association, Box 1541, Charleston.

The Coming Election

Once more the JOURNAL desires to call attention to the general election on November 4, 1930. The complete personnel of the senate and house of delegates of the West Virginia legislature will be chosen at that time, and the medical profession should become active, not so much in favoring one candidate over another, but in getting acquainted with all candidates and in making known the wishes of the medical profession before the election is held. There are many members up for reëlection who voted against the medical profession in 1929. Better results could probably be obtained by making our objectives known to these candidates than in trying to oust them on November fourth.

In other words, we feel that the average honest and intelligent member of the legislature will look with favor upon the general objective of the medical profession if he has a proper understanding of just what that objective is. We stand for all measures that will raise the standard for the practice of medicine in West Virginia and against all measures that are directed toward lowering that standard. While this objective is quite simple, there are still many legislators who believe that a bill to lower our standards is "just a fight among the doctors." If these legislators could be made to understand that there are 1,800 medical doctors fighting to raise the standards and about 150 pseudo-doctors fighting to lower them, we would get much better support when the legislature convenes next January.

This process of legislative education can best be accomplished by the county societies throughout the state. It can be accomplished through special committees, through "smokers," through correspondence and through personal contact. But the time to act is now; not after the election.

COMMUNICATIONS

Committee on Otosclerosis

West Virginia Medical Journal:

The Central Bureau of Research of the American Otological Society, Inc., takes pleasure in sending to all who have so liberally subscribed to the Research

Fund a brief account of the work being done by the Committee on Otosclerosis.

The committee early recognized that there was urgent need to collect, translate, and codify the numerous contributions on otosclerosis which had been published in many languages by many workers. After considerable labor, it published a two-volume work of 684 pages (*Otosclerosis*, New York, 1929). In this there is presented a summary of the investigations of otosclerosis to date. It makes readily available the results of many workers, and has already proved of value to those who desire to start along new paths. Here it is possible to familiarize oneself with the outcome of the studies of previous investigators. Even to those who are not carrying on investigation, it gives valuable information regarding the nature of the disease and lines of treatment which have been suggested, as well as other important points. This work has received highly commendatory press notices, both here and abroad.

In outlining the research work to be done, the committee has been aided by neurologists, physiologists, anatomists, and others in various universities in this country and in Canada. As a result of their advice, it was decided that, since contributory causes resulting in progressive deafness were known with little or no certainty, it was advisable to study them intensively.

One of these was the question of how far heredity is a factor, especially in otosclerosis. Professor Charles B. Davenport, of the Department of Genetics, Carnegie Institution of Washington, agreed to carry on this inquiry in connection with his department, which is eminently qualified for such an investigation. Sufficient funds were allocated to enable this to be done. In a preliminary report he states that the department has collected a "wonderful lot of material covering 100 pedigrees of families, and has made a study of 340 individuals where otosclerosis shows a tendency to appear." These studies confirm the idea that there is an inheritance of a factor or factors that make for otosclerosis. About 60% of the children show otosclerotic tendency, but regarding the other 40% the inheritance is not clear. The tentative suggestion is made by the writers that "there are other causes which play an effective part, and further research is being done to determine what these causes may be." We need not point out that this raises an important question. To aid further research, additional funds have been allocated.

It has been believed, with a considerable amount of probability, that a disturbance of metabolism will produce or aggravate otosclerosis. With this in view, under the supervision of Professors James B. Collip, Boris P. Babkin, and Herbert S. Birkett, a study is being made, at McGill University, of the effects of the glands of internal secretion on the ear and on hearing. It is well known that these glands play an important part in the ultimate changes in our bodies. This very difficult investigation is still in its experimental stage, and it is not possible at this time to give even a preliminary report.

From Harvard Medical School, Prof. Eugene A. Crockett reports on the effects of particular diets with measured calcium contents when given young people from otosclerotic families who are beginning to show early stages of this disease. During the period in which the study was carried on, improvement was noted. This work is being continued, as the period is yet too brief in which to give a definite statement or outline of the permanent efficacy of the above treatment.

Work has been done by Prof. Theodore H. Bast, of the University of Wisconsin, regarding the method in which the normal bone is formed in the ear in fœtal and infantile life. Here our knowledge has been very defective. Dr. Bast has found that in the ear the bone is formed in a manner somewhat different from that in which other bones of the body are formed, and that there is normally present a residue of what may be called imperfectly ossified areas which persist during the life of the individual. It is noteworthy that it is in one of these areas that otosclerosis most commonly appears, and to which it may be confined. Dr. Bast has finished the work in the embryo and is now carrying this investigation into early infantile life.

It was obvious to the committee that the time was not far off when experimental work would have to be done on animals, by feeding, by administration of drugs, or otherwise, in order that the hearing of animals so treated might be accurately ascertained. At present no good method of testing hearing in animals is available, and the committee felt that, as a necessary preliminary to this investigation, a new and definite method should be sought. After careful consideration and correspondence with several leading physiologists and psychologists, it was decided to allocate funds for two fellowships which will be offered to suitable candidates to work at McGill and Cornell universities, where there are laboratories well equipped for this work and professors interested in such an investigation.

It will be noted that the investigations being done are conducted in various universities. The committee has endeavored to stimulate the work in scientific departments, where it can best be carried on. The aim has been to secure the best men who were available and free, no matter where, and assist them in every way. In order to obtain full information with regard to all available possibilities throughout the country, a Scientific Advisory Committee has been appointed, and it is expected that its assistance will greatly facilitate the work of the central body.

The committee will gladly answer any inquiries you care to make regarding the progress of its work.

ARTHUR B. DUEL,
Director of Central Bureau, and Chairman of Board of Trustees of Research Fund.
J. GORDON WILSON,
Secretary of Committee on Otosclerosis.

Institute for Mental Hygiene

PENNSYLVANIA HOSPITAL
111 N. Forty-ninth Street
Philadelphia, Pa.

West Virginia Medical Journal:

The Pennsylvania Hospital announces the opening of its Institute for Mental Hygiene, and asks your coöperation, especially for two ventures—one in finding a new type of medical patient, and the other in finding a fair rate of charges for patients of moderate means. These ventures can not succeed without the help of the leaders in medicine in your community.

The institute is planned for patients who will meet the physicians more than half-way in recognizing that they need help—for fatigue, worries, fears, maladjustments, difficulties in getting on with other people or at their work. The services are for both outpatients and resident patients. There are private accommodations of any type desired for those who remain at the institute for extensive diagnostic service and treatment. Mental factors as well as physical will be sought out and treated. Classes in occupational and physical therapy, music, and recreation can be used by outpatients or by the patients of any member of a county medical society who wishes to make arrangements for them with the occupational or physical director. Children will be received in the outpatient department and in the Franklin School for problem children. The institute is not licensed and can not receive any committed patient. It will be greatly interested in toxic mental disturbances and in problems of general convalescence.

An experiment in medical economics is also planned. It is believed that many patients are now hiding their troubles from physicians because they dread unknown charges on one hand and free clinics on the other. The institute will try to furnish an actual cost-of-care service designed to give people of moderate means every essential of good treatment, including privacy and choice of physician, but with no element of charity. Its experience with such patients it will at once give to physicians in private practice in the hope that a new group will come to physicians' offices for help. Private full-rate patients will also be received, and the institute will be ready to help suitable low-rate and free patients.

Patients may be referred for supervision and treatment or for consultation only. When patients are referred for treatment, the institute invites the physician to act as consultant.

Very truly yours,
INSTITUTE FOR MENTAL HYGIENE,
PENNSYLVANIA HOSPITAL.

OBITUARY

James A. Riedy, M.D.

Dr. James A. Riedy, of Monongah, fifty-eight years of age, died on July 23 of heart disease. He had been a member of the Marion County Medical Society and the West Virginia State Medical Association since 1907, and was active in handling the convention affairs at the Fairmont meeting in 1928. Dr. Riedy was well known in the northern part of the state for his interest and his activity in his county society.

The deceased was born in 1872 and was graduated at the age of thirty from the College of Physicians and Surgeons in Baltimore. He came to West Virginia the following year and received his state license in 1903. Since that time he has been in active practice in this state until his untimely death in July.

Dr. Lewis VanGilder Guthrie

Dr. Lewis VanGilder Guthrie, sixty-two years of age, died at his home in Huntington on September 21, 1930, following an illness of six weeks' duration. Dr. Guthrie, one of the best-known medical men in West Virginia, was superintendent of the Huntington State Hospital for incurables and had devoted virtually his entire lifetime to the welfare, comfort, and care of mentally afflicted persons.

Born in Point Pleasant, January 8, 1868, the only child of Judge Francis Asbury Guthrie and Clara Elizabeth (VanGilder) Guthrie, he received

his education in the public schools of Point Pleasant, Virginia Polytechnical Institute, Roanoke College, and the College of Physicians and Surgeons at Baltimore, Md.

He returned to Point Pleasant and engaged in general practice for eight years before he was appointed on June 1, 1897, as superintendent of the State Hospital for the Insane at Spencer, and began the work to which he devoted nearly all of his life. He remained at Spencer for four years, when he became superintendent of the West Virginia Asylum for Incurables at Huntington. Through his efforts the name of the institution was changed to the Huntington State Hospital, and he remained in active charge there for several decades, during which time he gained national recognition as an alienist.

Included in his duties as head of West Virginia's largest institution for the care of mental defectives was the task of giving mental examinations to prisoners condemned to death in all cases where there was a possibility of mental disorder. That task was started after the West Virginia state laws were changed to provide that all persons sentenced to death should be executed at the state penitentiary instead of in the counties where they had been convicted.

Despite his heavy duties, Dr. Guthrie found time to contribute many manuscripts to the literature of his chosen field. Among his contributions were treatises entitled: "Insanity More Preventable Than Curable"; "Dementia Præcox: Observation and Treatment"; "The Feeble-Minded with Special Reference to Juvenile Delinquency and Venereal Diseases"; "Mental Depressive Psychosis"; "The Mental Defective in West Virginia," and "Paranoia-Monomania."

In addition, Dr. Guthrie served in many capacities with various associations and commissions. Among those posts were: Consulting psychiatrist for the United States war risk insurance in West Virginia; medical examiner for the Cabell county lunacy commission; chairman of the committee on nursing for the American Medico-Psychological Association; chairman of the advisory committee of the State Conference of Charities and Corrections; auditor of the American Psychiatrist Association; chairman of the state commission for mental hygiene, and medical advisor to the West Virginia State Board of Control. Dr. Guthrie also was a member of the American Medical Association, the West Virginia State Medical Association, and the Cabell County Medical Society.

Banking engaged the attention of Dr. Guthrie during his leisure moments, and he served as president of the Bank of Spencer and as vice-president of the First National Bank of Huntington. He was a Republican, a Knight Templar, and a thirty-second-degree Scottish Rite Mason. Dr. Guthrie married Margaret Lynn English on June 15, 1889, at Point Pleasant.

Funeral services were conducted from the palatial Guthrie home in Huntington on the afternoon of September 22, and interment was made temporarily in the mausoleum of the Spring Hill cemetery there. Among the honorary pallbearers were Governor William G. Conley and former Governors Albert B. White of Parkersburg, Senator H. D. Hatfield of Huntington, John J. Cornwell of Romney, E. F. Morgan of Charleston, Howard M. Gore of Clarksburg, and W. A. MacCorkle of Charleston. The list of honorary pallbearers also included the names of many state officials and former officials with whom Dr. Guthrie had worked during his twenty-nine-year connection with the Huntington State Hospital.

The active pallbearers included the physicians who attended Dr. Guthrie during the illness which began with a heat stroke last July and terminated in his death. These were Drs. R. J. Wilkinson, W. E. Vest, Joseph A. Guthrie, Ray M. Bobbitt, James R. Bloss, R. M. Wylie, and W. D. Stewart, of Huntington, and Dr. C. A. Ray of Charleston.

Dr. Guthrie is survived by his widow, Mrs. Margaret Lynn English Guthrie, and two daughters, Mrs. F. Witcher McCullough, of Huntington, and Mrs. Ben Williamson, Jr., of Ashland, Kentucky. Four grandchildren also survive.

In the passing of Dr. Guthrie the mentally ill lost a great friend, the science of psychiatry lost a brilliant follower, and the state of West Virginia lost one of its most distinguished and outstanding citizens.

COUNTY SOCIETY NEWS

Tyler-Wetzel County

The formation of the Wetzel County Medical Society took place on the evening of August 26 at a called meeting which was held in the city hall at New Martinsville. Dr. James D. Schmied, of New Martinsville, was elected president of the new society; Dr. F. E. Martin, first vice-president; Dr.

E. E. Fankhauser, second vice-president, and Dr. R. H. Leu, secretary-treasurer. The board of censors was made up of Dr. John W. Pyles, Dr. J. O. Theiss, and Dr. P. L. Freeland, of Proctor. Mr. Joe W. Savage, state secretary, was present at this meeting and assisted in forming the new organization.

Following the organization of the Wetzel society, a meeting was held at the John Kellar camp in Tyler county on the evening of September 2, with more than twenty doctors from both Tyler and Wetzel counties in attendance. After a fine turtle supper had been served, Dr. Schmied called the meeting to order and Dr. S. A. Cunningham, of Marietta, Ohio, delivered a splendid talk on "The Relation of a Medical Society to the Physician and the Community." Dr. Cunningham was followed by Dr. J. W. Pyles, of New Martinsville, who gave a talk on "Hospital Experiences."

After the scientific program had been presented, it was agreed by those present to combine the doctors of Tyler and Wetzel counties into one group, to be known as the Tyler-Wetzel Bi-County Medical Society. The next meeting of the joint society will be held at Sistersville on the evening of September 30, and a big turnout is expected. Interest in the newly formed society is apparent on every hand.

R. H. LEU, Secretary.

Harrison County

The first fall meeting of the Harrison County Medical Society was held at the Stonewall Jackson Hotel, Clarksburg, on the evening of September 4. The address of the evening was made by Dr. Chester R. Ogden, of Clarksburg, on the subject of "European Clinics." Dr. Ogden recently returned from a tour of Germany, Switzerland, Austria, Italy, France, and the Balkans, where he visited almost all of the famous clinics of Continental Europe. His talk, interspersed with both medicine and history, was highly interesting and was well received by the large audience in attendance.

Mr. Joe W. Savage, state secretary, was also present at this meeting and discussed plans for the 1931 meeting, which will be held in Clarksburg next spring. The society selected the Stonewall Jackson Hotel as the headquarters hotel of the convention, where all meetings will be held and where the registration and exhibit booths will be located. The date for the 1931 meeting will not be selected until after the date is fixed for the Philadelphia meeting of the American Medical Association next year.

J. F. WILLIAMS, Secretary.

Eastern Panhandle

The fall meeting of the Eastern Panhandle Medical Society was held in the Gold Room of the Shenandoah Hotel, Martinsburg, at 11:30 o'clock on the morning of September 10, with an excellent attendance. Following a luncheon at the hotel, Dr. G. P. Morison, president, called the meeting to order and a short business session was held. After the business was disposed of, a number of interesting cases were reported by Dr. H. G. Tonkin, Dr. James A. Duff, and Dr. M. H. Porterfield.

The scientific essay was presented by Dr. W. W. Brown, of Shenandoah Junction, sage of the society, on the subject, "The Use of Sulphur in Medicine." After the presentation of this paper, Dr. A. J. LeMaster, of Belington, thanked the society for its action in electing him to honorary membership at a preceding meeting.

Dr. W. Ross Cameron, secretary of the Eastern Panhandle society, who expects to locate at Hagerstown, Maryland, within the next few weeks, tendered his resignation at this meeting. However, the society refused to accept this resignation, and unanimously requested Dr. Cameron to continue to serve as secretary until the December meeting, at which time his successor will be elected. Dr. Cameron gave his consent to serve until the December meeting.

This was a most interesting session of the Eastern Panhandle society, with more than twenty members in attendance. The society expects to continue through the winter with a number of excellent programs. There is a great interest being manifested in the society this year.

PUBLIC HEALTH

A. P. H. A. Meeting in Fort Worth

For the first time in the fifty-nine years of the history of the American Public Health Association, Texas is to have the honor of entertaining the association at one of its annual conventions. The fifty-ninth annual meeting will be held in Fort Worth on October 27th to 30th.

Some indication of the importance of this convention to the public health workers of this country, Canada, Mexico, and Cuba, is reflected in the work of preparing the program of sessions and speakers,

which has been going on for months in the headquarters office of the association at 370 Seventh Avenue, New York City.

Nearly two hundred speakers, among them some of the country's leading health officers, physicians, scientists, sanitary engineers, dieticians, experts in epidemiology, in child and industrial hygiene, public health education and nursing, will address the forty-four sessions and symposiums which will be held during the four days of the convention in the Hotel Texas of Fort Worth. Two of the speakers will be the president of the American Public Health Association, A. J. Chesley, M.D., who is also commissioner of health of Minnesota; and Hugh S. Cumming, M.D., surgeon general of the Public Health Service of the United States, who succeeds Dr. Chesley as president of the association at Fort Worth.

Founded in the city of New York in 1872 by Dr. Stephen Smith, who died in 1923—a leader in the field of public health work and the organizer of the Metropolitan Board of Health of New York in 1866—the American Public Health Association is the oldest public health organization on this continent. Every year since the association was formed it has brought together at its national conventions all the various public health interests engaged in the work of human conservation. These interests include such subjects as protecting the purity of drinking water, the guarding of milk supplies, the care and disposition of sewage and waste, the prevention of noise, of overcrowding in cities, the study of fatigue, light and ventilation in schools and factories, and the pollution of waterways and atmosphere. Almost every subject which comes under the heads of public and personal hygiene, municipal sanitation, school sanitation, household sanitation, unwholesome trades and dangerous occupations, is within the scope of the association's field of interest.

Prominent among the speakers who will address the forty-four sessions and preside at the six symposiums are Shirley W. Wynne, M.D., commissioner of health of New York City; Rafael Silva, M.D., chief of the Department of Public Health of Mexico City, Mexico; Gordon Bates, M.D., general secretary of the Canadian Social Hygiene Association of Toronto; John M. Bunker, Ph.D., professor of biochemistry and physiology of the Massachusetts Institute of Technology; W. A. Evans, M.D., director of the health department of the Chicago *Tribune*; W. H. Ross, M.D., president of the New York State Medical Society; H. W. Schoening, D.V.M., Bureau of Animal Industry, Washington, D. C.; William C. Hassler, M.D., health officer and executive officer of San Francisco; T. F. Murphy, M.D., chief statistician for vital statistics, Bureau of the Census, Washington, D. C.; John A. Farrell, M.D., associate director, International Health Division, Rockefeller Foundation, New York; John W. Burns, M.D., president, Texas State Medical Association; James A. Hayne, M.D., commissioner of health of South Carolina; Louis I. Dublin, Ph.D., chief statistician of the Metropolitan Life Insurance Company, New York; John R. Baylis, filtration chemist, Department of Public Works, Chicago; C. C. Young, D.P.H., State Department of Health Laboratories, Lansing, Michigan; Joseph C. Bloodgood, M.D., chairman of the Maryland Cancer Committee and an outstanding authority on the prevention and cure of cancer; C.-E. A. Winslow, Dr.P.H., Yale University, New Haven, Conn.; Aristides Agramonte, M.D., professor of bacteriology of the University of Havana, Cuba; George W. McCoy, M.D., director of the National Institute of Health, Washington; Sally Lucas Jean, health consultant, New York City; W. M. Dickie, M.D., secretary of the California Board of Health; J. G. Cunningham, M.D., of the Provincial Board of Health of Ontario, Canada; and many others.

Effects of Radiant Energy

The Public Health Service, in conducting studies relating to industrial hygiene, has recently completed a report dealing with the effect of radiant energy on skin temperature. This report describes the instruments that were devised and employed in these studies to determine radiant energy and skin temperature. A general picture of the results obtained has also been given as an indication or sample of the relationship between skin temperature, radiant energy, and the atmospheric conditions among steel workers. The final comparisons have been left to a later monograph which will show what correlations may appear between conditions found and the sickness rates, primarily pneumonia.

The following points have come out rather clearly in this preliminary analysis:

1. Intense sources of radiant energy had a pronounced effect on the skin temperatures of workers exposed to them; the forehead and cheeks showed the greatest increase.

2. Great differences in the skin temperatures of different parts of the body, for a single individual,

were found in workers exposed to radiant energy.

3. Even under relatively cold atmospheric conditions, not far above the freezing point, high skin temperatures were encountered in workers exposed to radiant energy.

4. For workers not exposed to radiant energy there was a definite relation between atmospheric conditions and skin temperatures, both for arduous and for moderate work; the skin temperatures increasing with increase of effective temperature.

Mental Disorders and Public Health

In a recent address, Surgeon General H. S. Cumming of the United States Public Health Service pointed out that the public health administrator of the present day is called upon from time to time to make new adjustments and new adaptations to meet the ever-changing conditions of modern life. He called attention to the fact that new diseases are being recognized and discovered which demand studies and investigations for their control and suppression; that old diseases lose their significance through changing virulence, a community immunity, modifications in living conditions, or the development of more accurate methods for their prevention, while still other diseases, long recognized, in time become of greater relative importance and significance to the public health official.

The business of public health is constantly changing. The dramatic and spectacular experiences in the suppression of disease borne by insects, water, food, or other physical agents, occur less and less each year. This is probably due, in part, to the fact that mankind has become more tolerant and cognizant of the necessity for absolute control of his physical environment. But public sentiment has not been sufficiently aroused to demand the control and suppression of those diseases that are dependent for their prevention on the restriction of individual rights. In the field of public health, the restriction and control of persons, such as disease carriers, afford an altogether different problem from the restriction of things and the control of physical environment. New adjustments must be made from time to time by health agencies to meet the spirit of the times, but these must be tempered by the customs and traditions of public health practices and procedure.

The necessity for directing efforts toward the prevention of mental disorders, toward the conservation of mental health, and toward the amelioration of adverse mental states is apparent by the ever-increasing number of persons with mental disorders seeking aid in public institutions. During the fifty-year period from 1880 to 1930, the rate of persons under care in state hospitals for the insane alone had increased from 81 to more than 220 per 100,000 of the general population. The rate had almost trebled, but the actual number of cases under care had increased to almost six times the number under care in 1880. The rapid expansion in public facilities for the care of the group comprising one form of mental illness—namely, the group for which the public demands segregation—has entailed an enormous outlay of public funds for buildings and equipment, and required yearly increases in expenditures for the care of inmates. This economic loss is of vital interest to legislators and practical administrators who are equally desirous of reaching an adequate solution of the problem. An intangible but none the less important aspect of such a situation is the economic loss to the community through invaliding so many people in the prime of life, and the suffering of individuals whose families are not infrequently rendered improverished by such diseases.

The problem of the so-called insanities is only one of the several problems, for other mental disorders also claim attention. These include the mentally defective, or feeble-minded, as they are more often termed. Their prevalence is not exactly known, but studies conducted by the Public Health Service, as well as by others, indicate that they may be found in the proportion of about five to each thousand of the general population. With this figure as a basis, it is estimated that there are at least 500,000 feeble-minded persons in the United States today.

For a long time, mental diseases were considered apart from general medicine and little effort was made to understand their nature or causes. In recent years, however, there has been an awakening of interest which has developed the specialty of psychiatry more or less independently of other branches of medical practice. A traditional aversion toward those of unsound mind, shared by the medical profession, probably operated in no small degree to produce this effect. Among other factors which played a part in this independent development was the segregation of mentally disordered persons in public institutions that were more or less isolated and remote from other centers of medical work, and also from a conscious or unconscious isolation on the part of workers engaged in this special field of medical endeavor.

In approaching the problem of mental health, the public health administrator should contemplate the coördination of health activities with those institutional and communal forces that are called upon to minister to the needs of the mentally ill. A broad program of mental hygiene should consider where and under what conditions mental disease occurs and assist in developing appropriate means for the early recognition and treatment of mentally ill persons by providing adequate and suitable facilities for such purposes and by training personnel to undertake the work. It should also contemplate investigations and studies with respect to the underlying reasons or causes of mental ill health and interpret and diffuse such knowledge to the public and the medical profession. A balanced program should also consider a just apportionment of the cost of supervision and care of the mentally ill persons by a humane and efficient method of interchange between communities having responsible jurisdictions, thus partly serving in the solution of the economic problems involved. A well-balanced program must take cognizance of the activities of agencies tending to conserve an individual's social integrity and afford such assistance and coöperation as may be possible, either directly or indirectly, as may influence the solution of these problems.

Sickness Among Industrial Employees

In a report recently published, the United States Public Health Service points out that an influenza epidemic was in progress during the final month of 1928, affecting adversely the rate of sickness in the fourth quarter of that year. For this reason, the disability rate for the last three months of 1929 among a group of about 110,000 industrial employees makes a favorable comparison with the rate for the corresponding period of the preceding year. The frequency of disability from sickness lasting more than one week was 27 per cent lower in the fourth quarter of 1929 than in the same quarter of 1928. The respiratory group of diseases shows the greatest decrease, of course; the rate was little more than one-half that experienced in the last three months of 1928. Influenza and grippe decreased 64 per cent, and pneumonia 26 per cent, from the incidence experienced during the fourth quarter of 1928. In the last three months of 1929, however, bronchitis and diseases of the pharynx and tonsils increased 13 and 9 per cent, respectively, but the incidence of tuberculosis declined 20 per cent, and the rate for respiratory diseases other than those mentioned above dropped 5 per cent from the rate of the fourth quarter of 1928.

It is quite possible that the recorded sickness presented above understates, to some extent, the real magnitude of the incidence rate of cases causing disability for more than one week, because a number of the reporting associations do not pay sick benefits for disability on account of the venereal diseases, for illness resulting from the violation of any civil law, for the results of willful or gross negligence, and for certain other causes; and some associations do not pay for chronic diseases contracted prior to the date of joining the organization, for disabilities caused by or growing out of specific physical defects, nor for illnesses not reported within specified time limits. Of more importance, perhaps, is the fact that the reports come from the larger companies having well-organized employment and medical departments which make a physical examination of applicants so that a somewhat favorably selected group from a health standpoint may result. Workers in poor health who doubt their ability to pass the physical examinations may tend to drift into the smaller industrial establishments where the physical condition of the applicant is usually given less consideration. As offsetting factors, a few cases of malingering may be included in the records, and the associations with the most liberal sick-benefit provisions may attract persons when their health begins to fail. On the whole, it seems that the statistics presented may tend more toward understatement that overstatement of the average frequency of disability which lasts longer than one week among industrial employees.

BOOK REVIEWS

Nervous Indigestion

Nervous Indigestion, by Walter C. Alvarez, M.D., Associate Professor of Medicine, University of Minnesota (The Mayo Foundation); published by Paul B. Hoeber, Inc., New York.—That the field here dealt with is an important one can be seen from the fact that more than half of the persons who go to a physician for advice in regard to chronic indigestion have symptoms which appear to be largely functional in nature. The field is also important because the younger generation of medical teachers are mainly interested in the biochemistry of serious disease. As time goes on, more provisions will have to be made for acquainting medical students with the problems that they are

going to meet in practice, and particularly with the difficulties involved in treating the nervous patient.

It was for this reason that Alvarez compiled *Nervous Indigestion*, which includes two of his papers, recently published, that attracted wide attention, together with some chapters on the diagnosis of "functional" and obscure types of indigestion, and on the handling of the nervous patient. The book itself, consisting of some 275 pages, is made up of seven chapters dealing with such subjejcts as "Ways in which Emotion Can Affect the Digestive Tract," "Types of Indigestion," "Hints in Regard to the Taking of History," "The Handling of the Nervous Patient," "The Treatment of Nervous Indigestion," "Some Practical Points About the Physiology and Innervation of the Digestive Tract," and some "Suggestions for Further Reading." The book contains, in addition, a comprehensive index and bibliography.

Stedman's Medical Dictionary

Stedman's Practical Medical Dictionary, published by William Wood and Company of New York, is the only complete standard American medical dictionary published this year with a new revised edition. It includes seven new plates this year, also a new index of tables and index of plates. The new edition consists of 1,234 pages and extensive alterations and additions have been made. The new preface is particularly interesting.

Diet in Disease

Diet in Disease, by George A. Harrop, Jr., M.D., Associate Professor of Medicine, Johns Hopkins University, published by P. Blakiston's Son and Company, Inc., Philadelphia.—This new work points out some important modern facts on dieting in disease, and embraces the material used by the author in lectures, ward round and clinics to the third- and fourth-year classes at Johns Hopkins Medical School. Included is a brief sketch of some of the general principles of nutrition which have particular bearing on clinical dietetics, together with a brief account of the principal foodstuffs and their place in the diet.

The chief purpose of the book is to give the reader some comprehensive grasp of principles and some idea of the value and use of the foodstuffs which compose the diet. With these elements mastered, the doctor is at liberty to formulate his own treatment in the same way that he administers any other therapeutic agent. *Diet in Disease* includes eighty tables, together with sample diet and food lists.

Gonococcal Infection in the Male

Gonococcal Infection in the Male, by Abr. L. Wolbarst, M.D., Director of Urologic Clinics, Beth Israel Hospital, New York, and published by the C. V. Mosby Company, St. Louis, Missouri.—This is a second edition, revised and enlarged, with 140 illustrations and seven color plates. The most important of the new ideas of this second edition is the conviction of the author that gonorrhea must be considered a constitutional disease which can be cured only by the inherent reparative forces of the individual, acting through the blood stream. In harmony with this concept, the author has elaborated considerably the section dealing with constitutional therapy.

Most of the chapters in the second edition have been rewritten and a progressive fundamentalism aimed at. The work is intended for the active practitioner whose sole task is the cure of his patient. Particular emphasis is centered upon diagnosis and therapy; the bacteriology and pathology of gonorrhea have been dealt with only to the extent of their importance as an aid in the diagnosis. The second edition remains purely practical in scope, avoiding all theories and hypotheses.

MEDICO-LEGAL

Consent to Auxiliary Operation Required

[*Franklyn v. Peabody* (Mich.). 228 N. W. 681.]

The plaintiff had a stiff finger, resulting from an injury. At the Ford Hospital she was advised by Dr. Peabody that an operation would be beneficial. Dr. Johnston was assigned to operate. When the patient was under the anesthetic, he found that the superficial and deep tendons adhered together, and that to separate them it was necessary to sheath each in added fascia. Dr. Peabody was summoned, and he agreed with Dr. Johnston that, to obtain the best results, it would be necessary to transplant fascia from a limb of the patient to her hand. Dr. Peabody told Dr. Johnston to perform the operation in that manner, which he did. The patient being unconscious, she was not consulted. She claimed later that the operation on her thigh resulted in a muscle hernia, which caused pain and disability, and brought suit against the Ford Hospital and Dr. Peabody. The judge dismissed the suit as to the Ford Hospital. A jury awarded a verdict against Peabody for $10,000, for the injury to the thigh. He, however, moved for judgment in his favor, notwithstanding the verdict, and the court entered judgment accord-

ingly. Appeals were thereupon taken by both parties to the Supreme Court of Michigan.

The patient based her claim on alleged malpractice, and on an assault and battery or trespass to her person by an unauthorized operation on her thigh. The evidence was directed to the alleged assault and battery, and the verdict was based on that charge. Accepting the patient's claim as true, said the Supreme Court, Johnston, in operating on her thigh without her consent, committed a trespass on her person for which he was liable to respond in damages in an action for assault and battery. Dr. Peabody would be liable, too, for counseling the operation and advising Johnston to perform it. The rule is stated in 48 Corpus Juris, page 1130:

"Where a patient is in possession of his faculties and in such physical health as to be able to consult about his condition, and no emergency exists making it impracticable to confer with him, his consent is a pre-requisite to a surgical operation by his physician; and a surgeon who performs an operation without his patient's consent, express or implied, commits an assault for which he is liable in damages."

As an exception to the rule, however, it is stated (48 Corpus Juris, page 1131) that:

"Where an emergency arises calling for immediate action for the preservation of the life or health of the patient, and it is impracticable to obtain his consent or the consent of any one authorized to speak for him, it is the duty of the physician to perform such operation as good surgery demands, without such consent. And if, in the course of an operation to which the patient consented, the physician discovers conditions not anticipated before the operation was commenced, and which, if not removed, would endanger the life of the patient, he will, although no express consent be obtained or given, be justified in extending the operation to remove and overcome them. The implied appointment of the surgeon as the legal representative, during the period of unconsciousness, of a patient who has appointed no other person, does not give the surgeon a license to operate on the patient against his will or by subterfuge, or to perform a different operation than that consented to, or one involving risks and results not contemplated."

The rules laid down exact careful diagnosis by the surgeon. They require the discovery, so far as is possible, of the nature and extent of the proposed operation and the consent of the patient to it. In this case, the operation on the finger was not a major one. The conditions found when the finger and the palm of the hand were opened presented no emergency authorizing an operation on the patient's thigh, to obtain tissue for her finger. The case did not present the essentials of an implied authority arising in the course of an operation from the discovery of a condition so dangerous to the life or health of the patient as to demand a more extended or a further operation without consulting the patient. Good surgery undoubtedly required the acquisition of tissue to sheath the tendons in the finger and palm, but this did not authorize the taking of tissue for that purpose from the thigh of the patient without her consent. An unauthorized operation may be well performed and be in the line of good surgery, and nevertheless afford no excuse for a trespass. The trial court was in error in entering judgment for the defendant. In view, however, of the excessive damages awarded, the court held that the defendant was entitled to a new trial.—*Journal A. M. A.*, August 9, 1930.

GENERAL NEWS

Who's Who in West Virginia

The 1930-1931 edition of *Who's Who in America* has just been released by the A. N. Marquis Company, of Chicago, and contains the names of ten West Virginia doctors, all of them members of the West Virginia State Medical Association. The list includes three past presidents, the present president, one United States Senator, and five other physicians and surgeons in the state. There are four from Huntington, one from Charleston, two from Morgantown, two from Wheeling, and one from White Sulphur Springs.

The list is made up of Dr. R. D. Roller, Jr., of Charleston; Dr. James R. Bloss, Dr. Walter E. Vest, Dr. Henry D. Hatfield, and Dr. L. V. Guthrie, of Huntington; Dr. William S. Magill and Dr. John N. Simpson, of Morgantown; Dr. W. S. Fulton and Dr. Harry M. Hall, of Wheeling, and Dr. Guy Hinsdale, of White Sulphur Springs.

A *Who's Who* in public welfare work in West Virginia was recently published in Charleston and contained the names of thirty-one doctors in the entire list of 152 persons in the directory. The doctors in this directory included:

Dr. A. T. Post, Clarksburg; Dr. Joseph E. Rader, Huntington; Dr. David Littlejohn, Charleston; Dr. Russell H. Paden, Charleston; Dr. Carl Frost Raver, Charleston; Dr. George F. Grissinger, Beckley; Dr. Benjamin A. Crichlow, Charleston;

Dr. Lewis V. Guthrie, Huntington; Dr. Constantine C. Barnett, Huntington; Dr. M. V. Godbey, McKendree; Dr. William A. Welton, Fairmont; Dr. W. Scott Smith, Philippi; Dr. Albert M. Price, Madison; Dr. Raymond H. Curry, Barboursville; Dr. L. T. Vinson, Huntington.

Dr. James E. Fisher, New Cumberland; Dr. Vinton A. Selby, Clarksburg; Dr. Hugh Barbee Robins, Charleston; Dr. George W. Walden, Griffithsville; Dr. Virgil A. Deason, Logan; Dr. Frank F. Sowers, Fairmont; Dr. Sam R. Holroyd, Athens; Dr. James H. Wolverton, Piedmont; Dr. F. L. Baker, Burlington; Dr. J. Carl Lawson, Williamson; Dr. F. H. Brown, Summersville; Dr. L. T. Browning, Kingwood; Dr. O. L. Perry, Elkins; Dr. Floyd S. Suddarth, Grafton; Dr. James A. Baker, Middlebourne; Dr. Arthur D. Knott, Parkersburg.

The Nurse the Doctor Wants *

The ideal nurse for the present-day physician is one who has good breeding and an attractive personality, skill in giving general care and making patients comfortable, who can observe and report symptoms well, takes care to follow medical orders, and is adept at handling people.

This picture of the perfect nurse was ascertained from questionnaires sent to doctors in many branches of medicine by the Committee on the Grading of Nursing Schools, which is conducting a five-year study of nursing and its problems. The above qualifications were the five most stressed by the more than 4,000 physicians from all parts of the country who answered the queries.

Just how the various requirements for a good nurse rank in the minds of the physicians as a whole may be seen from the following:

Sixty-five per cent want the nurse to have skill in general care; 65% want skill in making the patent comfortable; 45% want skill in observing and reporting symptoms; 43% want care in following medical orders; 34% want good breeding and attractive personality; 30% want skill in handling people; 28% want skill in asepsis; 27% want familiarity with hospital routine; 22% want experience and background; 21% want familiarity with their personal methods; 15% want ability to work under a heavy strain; 15% want familiarity with a particular disease; 3% want the nurse to be a responsible adult to take charge of the family, and 3% want the nurse to be a mother's helper and houseworker.

The modern physician thus places the old-fashioned concept of a nurse as "a pair of hands and feet" at the bottom of the list. His demand now is for a woman of good background, of high professional principles, with thorough training and experience in the actual care of the patient, as nurse for his cases.

The study shows that the demand for practical nurses by physicians is steadily dropping, with 84% preferring the graduate, registered, trained nurse at all times for their own cases, and an additional 8% preferring them always for certain types of cases.

The general practitioner and the internist are most interested in the ability of the nurse to give general care; 69% and 70%, respectively, registering for this quality, as compared with the average percentage of 65. The neurologist is least interested in it, though more than half of those questioned checked for it.

Skill in observing symptoms is most desired from the nurse by the surgeon, neurologist, obstetrician, and pediatrician. The three last-named groups also had a more than average interest in the qualification of good breeding and personality. The surgeons emphasized skill in asepsis and care in following medical orders as well.

The neurologists are by far the most interested in having for their patients nurses who can handle people, 61% checking this, as compared with an average of 30%.

Nurses who take particular care to follow orders shine brightest in the eyes of the pediatricians, 57% of them desiring this qualification, while the average demand is 43%. The surgeons and the obstetricians are most interested in having nurses familiar with hospital routine and their personal methods.

Nine out of ten physicians reported they are getting the nurses they want and would be glad to take the nurse on their last case back again. The surgeons were the group most satisfied, 63% of them marking their nurses with the highest rating.

Some of the typical comments made by the physicians, that show what they appreciate in nursing care specifically, were:

"A good observer, gentle, thorough. She follows orders explicitly and reports changes promptly." "My nurse has a sense of humor, which helps a lot." "She kept hordes of anxious relatives and friends out of the room." "She has always been cheerful." "She combined a good technical training with

* A report submitted by the New York Committee on the Grading of Nursing Schools.

common sense." "She carried out orders, but modified them when the need was obvious." "She had a proper sense of the dignity of the position." "She is intelligent, observing, not afraid to take a severe case twelve miles in the country." "She was a good cook and knew how to handle people." "There has been a very distinct improvement in the patient's mental condition during her stay in the hospital."

"Her asepsis was perfect." "She was of great value in preventing a psychosis from developing." "One of the nurses was exceptionally good-natured and tolerant." "Any one who can feed a patient a half-pound of cooked liver daily for four or five months deserves credit for being a good cook and knowing how to handle people." "She sees to it that even the family is happy."

Traveling X-Ray

A railroad car equipped with x-ray and other apparatus to be used for physical examination of employees engaged in train operation and applicants for this service has just been built by The Milwaukee Road. It will be placed in service immediately under the supervision of the railroad's surgical department, and will be used over the system to supplement the work now performed by the road's physicians and surgeons.

The exterior of the car resembles a modern steel sleeping car. The interior is divided into a series of compartments provided with the most modern equipment available necessary for complete physical examination. Living quarters, including dining-room, kitchen, and shower baths, are furnished for the medical staff. A first-aid room is included. Employees' records and the findings of the examing board are carried in the office section of the car. An electrical plant to provide current for the x-ray and other apparatus is carried underneath the floor.

A Secretary of Public Health

A resolution urging the creation of a portfolio of public health in the cabinet of the president of the United States was passed at Detroit on June 24, at the annual meeting of the American Medical Editors' Association. The resolution, which has been mailed out to all members of the organization as well as to the officials of all state and national medical societies in this country, is as follows:

"WHEREAS, The health of its citizens is our nation's greatest asset; and,

"WHEREAS, There is now much duplication of effort and division of responsibility in regard to health matters, as now conducted; and,

"WHEREAS, Labor, commerce, agriculture, and other matters of relatively less importance are represented by an officer in the president's cabinet, while the nation's health is not so represented, although such representation has been recommended by the American Medical Association and endorsed in their platforms, from time to time, by both of the major political parties; and,

"WHEREAS, It seems reasonably certain that the various health activities now in operation could be more efficiently conducted if coördinated under a responsible head; therefore, be it

"*Resolved*, That the American Medical Editors' and Authors' Association, in convention assembled (at Detroit, Mich., on June 24, 1930), recommends and urges that steps be taken immediately for the creation of a portfolio of public health, in the cabinet, and that a copy of this resolution be forwarded to the secretary of state, Washington, D. C., to the secretaries of all national and state medical organizations, and to all members of this association.

"Signed, for the association:

"H. LYONS HUNT, President.
E. VANDERVOORT, Secretary."

Jamaica Ginger Paralysis

A peculiar form of paralysis, perhaps unlike anything ever known before, has recently afflicted a relatively large proportion of the population throughout some of the midwestern and southwestern states. Definite figures on the extent of the disease are not available, but it is certain that the numbers run into the thousands. At the request of the state health authorities of several states, the United States Public Health Service undertook studies of this condition. The investigations made in some of the stricken areas in Ohio and Tennessee seem to confirm the widespread rumor that the disease is closely associated with the drinking of an adulterated fluid extract of ginger. That it could not be due to the ginger as such became clearly evident from the fact that many of the victims, when questoned, admitted freely of having used similar preparations for beverage purposes for from one to five years, with no other effects than those derived from the alcohol. It soon became evident, therefore, that the condition must have resulted from some unknown poison or from some known poison whose action was so altered through the ginger or the alcohol as to render it

unrecognizable, which poison, in some way, got into a manufactured lot of so-called fluid extract of ginger at a relatively recent date.

The possibility of some known or only partially known poison, with its propertes so altered as to produce a condition in man heretofore virtually unknown, must be considered. From the very nature of the problem it would seem not improbable that the suspected ginger contained some denaturant, since denatured alcohol might very well have been, and probably was, used in the manufacture of some of the ginger extract, or that it contained some adulterant, since it is known with certainty that adulterants of various kinds have been used for some years in the manufacture of this preparation. The studies conducted by the Public Health Service, though by no means complete, seem to indicate that the latter explanation appears to be the correct one, though the mechanism of the suspected adulterant is as yet not clear.

The exact nature of the pharmacology of the compound which has been found uniformly present in suspected ginger and absent in unsuspected ginger is as yet unknown. From its chemical behavior it appears to resemble a phosphoric acid ester of tricresol, which in itself does not appear to be a well-defined chemical entity. Its resistance to heat, th strong alkali and extreme heat required for its saponification, and the fact that phosphate has been found in the suspected gingers, would make it very probable that it may indeed be the ester suggested.

Propaganda for Reform

Ampoule No. 61 Sodium Salicylate 15½ Grains, Ampoule No. 66X Sodium Salicylate, Sodium Iodide 15½ Grains Each, Ampoule No. 66X Sodium Salicylate, Sodium Iodide and Colchicine, and Ampoule No. 50 Iron and Arsenic (Iron Cacodylate) 1 Grain, Not Acceptable for N. N. R.—The Council on Pharmacy and Chemistry reports that these are included in the list of ampoules for intravenous use marketed by the Lakeside Laboratories, Inc., Milwaukee. In 1921, in reporting on "Some of Loeser's Intravenous Solutions," the Council stated the objections to the intravenous administration of sodium salicylate and sodium iodide and of mixtures of drugs in fixed proportions. Since this time no evidence in favor of the routine intravenous administration of sodium salicylate or of sodium iodide has been brought forward, and the objections to the fixed-proportion mixtures applies to the mixtures listed in this report. Ampoule No. 50 Iron and Arsenic (Iron Cacodylate) is unacceptable because the name is nondescriptive; because recommendations for the routine intravenous use of iron are not warranted, and because iron cacodylate presents an irrational and useless method of the administration of iron and arsenic. The Council declared Ampoule No. 61 Sodium Salicylate 15½ grains, Ampoule No. 59 Sodium Iodide 15½ grains, Ampoule No. 66X Sodium Salicylate, Sodium Iodide 15½ grains each, Ampoule No. 66 Sodium Salicylate, Sodium Iodide and Colchicine, and Ampoule No. 50 Iron and Arsenic (Iron Cacodylate) 1 grain unacceptable for New and Non-official Remedies because recommendations for the routine intravenous administration of sodium salicylate and sodium iodide are not warranted and because the administration of sodium salicylate and sodium iodide, of sodium salicylate, sodium iodide and colchicine in fixed proportion and of iron and arsenic in the form of ferric cacodylate, whether intravenously or otherwise, is irrational. (*Journal A. M. A.*, January 4, 1930, p. 31.)

Excretion of Barbital.—Sir Maurice Craig holds that barbital preparations may be taken for years without producing deleterious effects. This view has received some experimental verification. On the other hand, it has been held that in certain conditions —manic-depressive insanity, constitutional psychopathic inferiority, and psychoneuroses—its use may lead to habit formation, and that to such patients these drugs should never be administered. (*Journal A. M. A.*, January 4, 193., p. 35.)

Resuscitations and Intracardiac Injections.—The power to revive the dead is one that the physician is often, but vainly, expected to exhibit. The alleged miracles of such revivals by injecting epinephrine into the heart are always widely reported in the newspapers. Physicians who have heard of these alleged resuscitations are tempted to employ the same means. If the death is real, no harm and no benefit results. Revival follows sometimes, perhaps not because of the treatment but in spite of it. In such cases there is indeed grave danger that serious injury may follow from the treatment that the patient has received. The evidence seems conclusive that, if the patient revives after such an intracardiac injection, he would have revived without it. Intracardiac injection is not a justifiable measure for resuscitation. (*Journal A. M. A.*, January 11, 1930, p. 107.)

Pituitary Solution-Squibb 1 c.c., 5 Units, and Pituitary Solution-Squibb 1 c.c., 20 Units, Not Acceptable for N.N.R.—E. R. Squibb & Sons market Pituitary Solution-Squibb 1 c.c., 5 units, and Pituitary Solution-Squibb 1 c.c., 20 units. The first product is one-half the strength of solution of pituitary-U.S.P., while the second is twice the strength. The Council holds that it is not in the interest of rational therapy to market strengths different from that of the standard pharmacopeial product, and therefore can not give recognition to such preparations. Accordingly, the Council declared these Squibb preparations unacceptable for New and Nonofficial Remedies. (*Journal A. M. A.*, January 11, 1930, p. 105.)

Use of Electricity in Pneumonia

The following clipping from the August 8, 1930, issue of the New York *World* may be of interest to the profession. The St. Elizabeth Hospital mentioned in the report is a government institution. The newspaper story reads:

"WASHINGTON.—An electrical treatment for lobar pneumonia which is almost a specific, promising to save many thousands of lives annually when taken up by general hospitals and practicing physicians, is being applied at St. Elizabeth's Hospital here.

"While much less effective in bronchial pneumonia, the results with this malady also have been remarkable.

The method, as described by Dr. Watson W. Eldridge, of the hospital staff, is to pass, through the chest, a high-frequency alternating current at approximately 1,500,000 alternations a second, using two large tinfoil plates on the front and back. A voltage of about seventy is used.

"The object is to get heat inside the body. Here the body acts as a resistance unit. All other methods of heat therapy consist of applying heat on the outside, which has very little effect on the internal organs.

"The patient feels no skin sensation, the two electrodes against the skin remaining cold.

"When a case of lobar pneumonia is treated within the first twelve hours, the result is only a trifle short of specific; that is, cure in every case. Lobar pneumonia is the type which ordinarily, in five to eleven days, comes to a crisis, when the patient dies or begins to recover almost immediately. It has a very heavy death rate. The electrical heat treatment, says Dr. Eldridge, almost at once breaks down the pneumonia process and stops the infection. The crisis comes within a few hours, before the patient's strength has been depleted by the illness.

"Practically the same thing happens with cases first treated after more than twelve hours, but then the breaking down of the pneumonia process is slower. The crisis comes about the third day, instead of waiting, as is ordinarily the case, until the fifth or eleventh day. Here, also, the patient is much more likely to recover, although there is more possibility of a fatal termination.

"The beginning of lobar pneumonia is so striking, it was explained, that the greater percentage of cases are almost sure to be in the hands of physicians within twelve hours. One moment the victim is perfectly well. Suddenly he is seized by a chill lasting about twenty minutes, after which a high fever develops. This hardly can happen to any one without the victim knowing that something is seriously wrong and that he had better see a doctor at once.

"Considerable success has been attained with bronchial pneumonia, although less striking than with the lobar type. This, it was explained, may be due to the fact that it is more gradual in its onset and may continue for two or three days before the patient realizes that he is sick enough to require a physician.

"The method used at St. Elizabeth's is adapted from one devised by physiotherapists and used in a limited way during the war at military hospitals. For some reason it never has passed into general practice. A similar method has been used by Dr. George W. Crile in the Lakeside Hospital at Cleveland, who applied electrodes to cover the liver and the lungs during serious surgical operations, to prevent the development of post-operative pneumonia.

"The St. Elizabeth's physicians, Dr. Eldridge explained, have been working quietly with this electrical heat treatment for several years, but have been cautious about advancing claims for it. The result has been that, out of a total of approximately 200 lobar pneumonia cases among the insane patients, there have been only a few deaths. Under the constant observation of the medical staff, of course, it is unlikely that any patient could have lobar pneumonia for more than twelve hours without the condition being observed. Bronchial pneumonia also would be caught up quickly.

"The very rapidity of the cures, it was explained, has caused some doubts to be felt as to whether some of the patients really had pneumonia at all. This

doubt is overcome by making x-ray examinations of the lungs before the electrodes are applied.

"The electrical heating method also is used, but not with such notable success, in cases of muscular inflammation and in arthritis. The machine does not raise the actual temperature of the patient, but only of the local area which it is desired to affect.

"While the treatment can not be described as specific, so long as it does not produce exactly the same results—that is, cures—in every single case, it is about as near a specific as possible without actually being one, St. Elizabeth's physicians say."

Thirteen-Year-Old Mother

The youngest mother in West Virginia last year was thirteen years of age, while the oldest woman giving birth to a child was forty-nine. These facts were revealed by Dr. Carl F. Raver, director of the Division of Vital Statistics of the State Health Department, in a recent interview. There were six of these very young mothers, four white and two colored. Forty-five mothers gave their age as 14, while 225 were 15 and 649 were 16. The greatest number of mothers last year, 2,667, were in the age group from twenty-two to twenty-three.

Kanawha county leads in the number of babies born, 3,705 being reported. McDowell county was second with 2,703; Raleigh third with 2,077; Fayette fourth with 1,960; Logan fifth with 1,839; Cabell sixth with 1,822; Harrison seventh with 1,725, and Mercer eighth with 1,624. In Pleasants county the crop of babies was the smallest for the state, but 92 births being reported.

Of the 40,668 babies born, reports show that physicians were present at the birth of 36,917, while midwives and others officiated at the birth of 3,751. Statistics show that each year the number of births attended by physicians increases. This is due, in a large measure, to a greater knowledge of health and a demand for the safeguarding of the lives of mothers and infants. Since 1925 the midwives of the state have been required to secure a license annually from the State Health Department, the license being granted only on recommendation of a local physician.

Coffey-Humber Cancer Treatment

The medical profession is wary of cancer cures. It has been immunized against them by frequent inoculations. Yet "Hope springs eternal," and as long as 100,000 persons per year in America die of malignant disease, publicity for any new method of treatment will arouse wide public interest. The greatest recent moment in cancer publicity was the publication by Coffey and Humber, of San Francisco, of a statement that an extract from the suprarenal cortex, a stabilizer of tissue growth, caused necrosis and sloughing of human malignant tissue. Sufferers from the disease immediately swarmed to these men. An Associated Press dispatch later reported that Coffey and Humber were called to Washington to report before a senate committee, where the question was to be discussed of a special appropriation from Congress to expedite their work. At the hearing before a subcommittee of the Senate Committee on Commerce, a group of eminent authorities on malignant disease was called together.

The first physician to speak was Dr. W. B. Coffey, of San Francisco, who reported that he, with Dr. J. D. Humber, through a process created by them, had obtained an extract from the suprarenal cortex of sheep. A few drops of this, when injected into a patient in great pain and in the advanced stages of malignant disease, gave relief from suffering in five or six hours, and sloughing and liquefaction of the malignant growth, which began in twenty-four to forty-eight hours. The necrosis of the cancerous tissue was confirmed at autopsies, and the same effects had been noted in 1,300 inoperable cases which had received injections. The patients had been treated without charge. Only those were accepted who were sent as inoperables by physicians who had studied their cases and confirmed the diagnosis by pathological examination. Coffey and Humber did not claim to have found a cure or treatment, but were waiting for confirmation of their results by the medical profession.

The senators were impressed with the promise of the method, which had certainly a ring of honest dealing and scientific control.

Distinguished physicians long known in cancer work, Dr. Joseph Bloodgood of Baltimore, Dr. James Ewing of New York City, and Dr. C. C. Little of New York, managing director of the American Society for Control of Cancer, and also Surgeon General Hugh S. Cumming, president of the Southern Medical Association, spoke.

They confined their discussions to methods by which government assistance in cancer work might be given. The consensus of opinion seemed to be against government participation in or direction of research of private organizations at present, and in favor of support of health measures already before the senate. Dr. Bloodgood emphasized the value of

the established methods of cancer treatment with radium, x-ray, and surgery. The value of government coöperation in cancer control was stressed. Dr. Ewing described activities of foreign nations in cancer control, in Sweden, England, Belgium, and Germany. In Sweden, he says, all cases are treated in one government institution in Stockholm, where patients are transported without charge if necessary. In response to leading questions, Dr. Ewing made his opinion plain that no discovery in the immediate future would offer a cure for cancer. "I see not the slightest indication at any point on the horizon of any discovery of any sort which is likely greatly to affect the mortality of that 70 per cent of patients which we now lose. . . . The people are expecting some great new discovery. . . ."

"They may be hoping," Senator Johnson, of California, interrupted.

"They are expecting," Dr. Ewing repeated. "There is no reasonable expectation of a great new discovery entering the cancer field which will greatly affect that 70 per cent of cancers which I believe are now beyond the reach of medical science."

The opinion of one distinguished pathologist of the Coffey-Humber treatment was thus given in no uncertain terms. In spite of the immediately preceding report of liquefaction and necrosis in 1,300 inoperable cases, he considers that no great advance in cancer treatment is in sight.

A recent "Current Comment" in the *Journal of the American Medical Association* says that autopsies have now been done upon thirty patients treated by Coffey and Humber, and that both clinical and pathological results have been profoundly disappointing to "surgeons, pathologists, and other conoscenti" who have investigated the cases. The names of the investigators were not given. Though it is certain that the *Journal of the American Medical Association* would not speak thus editorially without good authority, at least a few of the names of the conoscenti should have been supplied.

The old psychological principle of fallibility of the witness is involved. The public may console itself by recalling that eventually truth always comes to light. Meantime, perhaps it will be discouraged for the present from making the long trip west.—*Southern Medical Journal.*

The Brinkley Case to Date

A complaint against John R. Brinkley was prepared by Mr. Ralston, assistant attorney general, April 28th, and signed by Dr. L. F. Barney. The complaint charged that, in his application for a license to practice medicine in Kansas, Dr. Brinkley falsely represented that he received his preliminary education in the Tuckasligee high school in 1908 and that no such school existed at that time. It also charged that he has been guilty of gross immorality and unprofessional conduct, in that he had pleaded guilty to selling intoxicating liquor on two counts and to maintaining a common nuisance on one count, before a justice of the peace in Junction City; that in 1921 he was placed under bond to keep the peace in Milford township; that he attempted to practice medicine in Illinois but left before the department of registration and education began action against him; that a license issued to him in Connecticut was revoked on the ground that his certificate was obtained by fraud; that in 1924 he was indicted in California on the charge of conspiring to violate the medical laws of that state; that in 1925 he was granted a diploma by the Royal University of Pavia, Italy, and that this diploma was later annulled on account of the low standing of the school in Kansas City from which he held a diploma, but that, in spite of this annulment of the diploma from the Royal University of Pavia, he still claims to be a graduate of that university; that at his hospital at Milford he performs what he calls "the compound operation" for the purposes of curing diseases of the prostate gland, high blood-pressure, impotency, sterility, some types of diabetes, neurasthenia, epilepsy, and dementia præcox; that in connection with the compound operation he claims that he sometimes transplants animal or human glands, etc. It is charged that this operation can not be performed in the manner described by him, and that such operation is of no benefit or value to the patient; that many patients upon whom the operation has been performed are in worse condition thereafter than before, and that in claiming the benefits of this operation he is working a fraud and deception upon the patient. It is charged that patients are frightened, by misrepresenting the seriousness of their condition, into signing checks for exorbitant fees and submitting to his compound operation; also that he gives talks over the radio for the purpose of enticing patients to his hospital, and that he diagnoses, and prescribes for, diseases of people over the radio; that he gives prescriptions by numbers and that these prescriptions can be filled only at certain drug stores from which he receives commissions, etc.

The hearing of the complaint was set for June 17,

the date for the regular meeting of the Board, and notice was served on Dr. Brinkley by a special officer.

Within a few days an action was brought by Dr. Brinkley's attorneys, in the District Court of Shawnee County, to enjoin the Board from further proceedings, on the ground that the law was unconstitutional because it failed to provide due process of law in that the Board was not empowered to compel the attendance of witnesses. Judge Whitcomb of the District Court denied the injunction.

An appeal to the State Supreme Court was taken and a request to advance the hearing was granted. An opinion was handed down by the Supreme Court on June 13, affirming the decision of the District Court. This opinion, which was prepared by Justice Burch and in which all of the justices concurred, was so comprehensive and so decisive it should be reprinted here if space permitted. It will be filed, however, for future use, by the Committee on History.

There are two paragraphs of the Supreme Court decision that may be quoted, however, because of their bearing on the nature of the hearing by the Board:

"The petition did not allege that the statute was lame in regard to specifying grounds for revocation of license, and it was not. Neither did the petition allege that the complaint did not state grounds for revocation of license prescribed by the statute. The complaint was by no means confined to challenge of the success of the licensee's gland operation, the claimed result of which is that dotards having desire without capability may cease to sorrow as do those without hope, and the complaint was not that the licensee is a quack of the common, vulgar type. Considered as a whole, the gravamen of the complaint is that, being an empiric without moral sense, and having acted according to the ethical standards of an impostor, the licensee has perfected and organized charlatanism until it is capable of preying on human weakness, ignorance and credulity to an extent quite beyond the invention of the humble mountebank who has heretofore practiced his pretentions under the guise of practicing medicine and surgery. The petition for injunction denied the charges contained in the complaint, but the ground for injunction was, the board has no power to hold a hearing to find out whether the charges are true or false."

One need not assume any intention to suggest a line of procedure in this paragraph in order to find in it a rather definite guide to the character of evidence to be introduced and stressed.

The other paragraph reads as follows:

"It may be necessary for the board to receive affidavits in support of the complaint. Witnesses should be produced for cross-examination if it be practicable to do so, but if it should become necessary to resort to affidavits, due process requires that the licensee should be afforded opportunity to inspect them and to procure counter testimony. If affidavits should be used in support of the complaint, reason for nonattendance of the witnesses should appear, so that in case of judicial review the fairness of the proceeding may be disclosed by the board's record."

It was probably this paragraph that suggested to the Board that, in order that there should be no possible complaint of unfairness by the attorneys for Dr. Brinkley, they should be permitted to introduce whatever evidence they could produce.

Immediately after the decision of the Supreme Court was known, the attorneys for Dr. Brinkley appealed to the United States Supreme Court and a stay of ten days was granted in which to file their case. They failed, however, to get a stay of proceeding from that court.

The Board met on June 17 and postponed the hearing to a time to be determined later. The hearing was finally set for July 15 at Topeka, and on that date the hearing began.

Documentary evidence to support the charges had been accumulating for some time before the complaint was filed. After it was made known that a complaint had been filed, much additional voluntary evidence was offered. In addition to this, Mr. McDonald, of the Kansas City *Star*, had personally visited and secured statements from men in various parts of the country who had been treated at the Brinkley Hospital and from their relatives and friends. All this was introduced, and in many cases the former patients appeared as witnesses. Affidavits were also presented from Dr. Max Thorek of Chicago and Dr. Lyons Hunt of New York, bearing on the probable results of goat-gland transplant operations. Dr. Edgerton, of Wichita, president of the Kansas Medical Society; Dr. Orr, and Dr. Okerblad from the University of Kansas School of Medicine, and several other surgeons gave expert testimony concerning the so-called "compound operation." All of the witnesses were cross-examined by the attorneys for Brinkley, coached during most of the time by one E. M. Perdue of Kansas City, Missouri, who advertises to examine blood samples

and make diagnoses by the Abrams method, to cure toxic goiter without surgery, and to reduce sacro-iliac subluxation, and whose name appears in the *Journal of the American Association for Medico-Physical Research* as its editor.

The introduction of documentary evidence and the examination of the various witnesses consumed the time of the hearing until about July 23, when the attorneys for Brinkley began to present affidavits and witnesses. There were numerous testimonial witnesses, much after the type of the first one, who stated that he had suffered for ten years with hernia, enlargement of the heart, high blood-pressure, etc., and that he was cured of all of these by this operation immediately, was able to walk around the next day, free from his hernia and with a normal heart. After a few dozen such witnesses had been heard, the attorney general advised the Board that this was cumulative evidence and that no more of that kind need be admitted. Much other evidence to refute the charges in the complaint was introduced by Dr. Brinkley's attorneys. Members of the hospital staff testified to his moral character and surgical skill, and the aforementioned E. M. Perdue testified to his superior education, his scientific knowledge and surgical skill, etc. Finally, Dr. Brinkley himself appeared before the Board, and, until cross-examined by Attorney General Smith, seemed to have made a good witness for himself. During this cross-examination he made some admissions that seemed, to the bystanders at least, to be very damaging to his case. After hearing Dr. Brinkley's evidence on July 30, the Board took a recess until September 15.

Considerable publicity was given by the newspapers to an invitation extended to the Board by Dr. Brinkley to visit his hospital at Milford and witness his clinical demonstration of his various operations. It is also stated by the newspapers that the invitation has been accepted and that the Board or some representatives of the Board will visit the hospital on September 15 to witness this demonstration, after which the hearing will be resumed.

It is impossible to reproduce even a synopsis of the evidence introduced at this hearing in the limited space available in the Journal. Clippings from the principal newspapers containing reports of the hearing have been and will continue to be collected and filed for future reference if occasion requires.—*Kansas Medical Journal.*

Gastric Manifestations

It is generally recognized that the symptoms of recurring epigastric pain, nausea and vomiting which are usually a part of the clinical picture of gastric disease may sometimes be associated with more distant lesions, such as chronic infections of the gall-bladder and of the appendix. It is not so generally appreciated, however, that the same symptoms are also commonly associated with a chronic spastic condition of the colon. The type of pain under discussion by Fred M. Smith, G. H. Miller, and W. M. Fowler, Iowa City (*Journal A. M. A.*, December 21, 1929), is localized in the epigastrium and often to the right and above the umbilicus. It may occur at intervals of from one to three hours after meals, and is described as a sensation of fullness, burning or gnawing, or a cramplike distress. These features of the discomfort resemble closely those of a peptic ulcer. They are, however, invariably associated with bowel symptoms, such as a feeling of fullness or even cramps over the lower part of the abdomen and the consciousness of gas. This distress is furthermore not always relieved by the taking of food or of sodium bicarbonate except when the latter is followed by the eructation of gases. It is relieved by the passage of gas by bowel and by bowel movement. It is intensified by any aggravation of the bowel condition, and is most prominent when the stools are scybalous or pencil-like in character. It may be experimentally induced by the distention of the stomach with air or by inflation of the colon. Three cases are reported.

Medal Awarded Dr. Spencer

Dr. R. R. Spencer, United States Public Health Service, was awarded the gold medal by the American Medical Association, in annual session at Detroit in June, 1930, for original work in the preparation of a vaccine against Rocky Mountain spotted fever.

A five-year record of practical prevention of Rocky Mountain spotted fever, achieved by Dr. Spencer, was the basis for the award of the medal. Rocky Mountain spotted fever is a disease of the northwestern part of the United States, conveyed to man by the bites of wood ticks which appear with the first warm days of spring or as soon as the snow melts on the south slopes of the canyons. Skin eruption appears about the third day of fever, first on the wrists, ankles, and back, and then over the whole surface of the body. In some localities the disease is mild, while in others it is very fatal, causing death from the seventh to the tenth day of illness.

In one large locality the disease caused the death of eighty-five per cent of adults who contracted it in the twelve years 1917–1928. In that locality the quest for a preventive inoculation has gone on at the hands of Dr. R. R. Spencer of the United States Public Health Service, year after year until, in 1924, came the discovery the results of which were presented to the American Medical Association.

In a community of 1,208 persons, 496 received the prophylactic inoculation, and among these there were three mild cases which recovered. But among the 712 who did not receive prophylactic inoculation there were nine severe cases, seven of whom died.

In a general population of about 15,000 people, 1,992 received prophylactic inoculation and among these there were five mild cases, all of which recovered. But among those of the population who did not receive prophylactic inoculation there were twenty severe cases, seventeen of which died.

Sheep-herders constitute an occupational group especially exposed to ticks. In such a group of 274 persons, 94 who were protected by vaccination remained free of infection, while among 180 who were not protected there were thirteen cases. In another such group of 283 persons, 99 who were protected furnished only one case, while 184 who were unprotected furnished nine cases.

Laboratory workers engaged in the hazardous search of the preventive (physicians, entomologists, and laboratory attendants) have constituted the group especially exposed to infected ticks and infected laboratory animals, and since 1902 the number of persons so exposed has been 75.

Until 1924 these workers knew no special prophylactic inoculation, and of sixteen of the earlier workers so exposed six contracted the disease and all died. But since 1924 there have been 59 laboratory workers, all of whom have received prophylactic inoculation, and among these there have been seven cases, all of whom recovered except one who received only one of the two requisite prophylactic doses.

Dr. Skaggs Wins Appeal

Dr. J. S. Skaggs, of Montcoal, member of the Kanawha Medical Society, recently won a writ of error and supersedeas in the state supreme court over the findings of the circuit court of Raleigh county, which awarded a woman $500 for alleged permanent injuries resulting from treatment rendered by the defendant. In his petition for the writ, Dr. Skaggs admitted that he gave E. D. Collins, husband of the plaintiff, a quantity of permanganate to be given his wife for a cold. He stated that he intended to give calcidin.

Mrs. Collins claimed in court that she became seriously ill after taking the medicine, and that she never had fully recovered from the effects. Her witnesses were members of her family and a few friends. Dr. Skaggs stated in his petition that Mrs. Collins presented no physicians as witnesses, while he had called to the stand Dr. C. A. Ray of Charleston and Dr. J. H. McCulloch of Beckley. Through Dr. Ray and Dr. McCulloch, and through his own testimony, he proved that permanganate, in the quantity given, was not a poison.

Evidence in the case set forth that Collins went home after receiving the medicine and administered the permanganate to his wife. He returned later and informed Dr. Skaggs that the condition of his wife was worse, and Dr. Skaggs, after checking up, promptly admitted his mistake. In spite of the testimony of expert witnesses for the defendant, the jury awarded a verdict of $500 for Mrs. Collins on June 20, 1930. For lack of expert testimony for the plaintiff, the supreme court overruled the trial court.

Central Tri-State Meets

The Central Tri-State Medical Society held its first fall meeting at the Hotel Prichard, Huntington, on the afternoon and evening of September 25, 1930. An excellent attendance turned out for the meeting and a splendid program was presented. The election of officers for 1931 was held at the banquet, between the afternoon and evening sessions.

Speakers on the scientific program were Dr. H. B. Weiss of the University of Cincinnati, who spoke on "Coronary Heart Disease"; Dr. Robert Carothers, of Cincinnati, who spoke on "The Modern Treatment of Fractures," illustrated with lantern slides, and Dr. D. E. Jackson of the University of Cincinnati, who spoke on "The History of Medicine." The meetings of the society were thrown open to the general public.

Dr. Vest Is Speaker

Dr. Walter E. Vest, of Huntington, president of the State Association, was the principal speaker at the formal opening of the Medical College of Virginia at Richmond on September 17. Many physicians and surgeons of Richmond, together with several hundred students, attended the convocation exercises. Dr. Vest's subject was "Student Obligations." Dr. Vest, member of the class of 1909,

is president of the general alumni association. Dr. W. T. Sanger, president of the Medical College of Virginia, presided at the meeting.

The 1931 Meeting

Plans for the 1931 meeting of the West Virginia State Medical Association at Clarksburg are now under way, and a number of preliminary details have already been worked out. Headquarters for the Clarksburg meeting will be established at the Stonewall Jackson Hotel, which has adequate facilities for taking care of all general and sectional meetings, commercial exhibits, and the like. As nearly as posible, all convention activities next year will be housed under one roof, with the exception of the banquet, which will probably be held in the Masonic Temple at Clarksburg.

The date for the 1931 meeting will not be fixed until the American Medical Association date is selected for the 1931 meeting in Philadelphia. Should the A. M. A. date be in May, the state association will probably meet in June. Likewise, if June is selected for the A. M. A. meeting, the state meeting will probably be held on May 19–21, 1931. As soon as the date for the state meeting is selected, reservations for rooms can be obtained from Mr. Chase E. Gillen, manager of the Stonewall Jackson Hotel.

The committee on scientific work of the Association held its first meeting in Huntington on September 18 for the purpose of outlining the 1931 program and of selecting speakers for the occasion. Invitations will not be sent to the speakers, however, until the meeting date is fixed. The 1931 program promises to be one of the best in the history of the Association.

The Porter Narcotic Bill

The ethical medical profession did its utmost to prevent the passage of the Porter Narcotic Bill.

This sort of legislation was unnecessary, uncalled for, and superfluous in every respect. Further, it is of a piece with the menacing tendencies towards bureaucratic control that, if unchecked, will soon work the destruction of our democracy.

Interference begotten by lay assumption of scientific procedure indicates a false premise upon which to build either medical progress or moral reform. While it may be urged that the persons directly concerned with the promotion of such legislation as this Porter Narcotic Bill may have been, and possibly were, actuated by a desire to aid their suffering fellowmen, it is decidedly dubious if they had, or have now, any idea of exactly what it was, or is, that their fellowmen are suffering from.

As a matter of fact, this new statute is not going to lessen in any way the number of drug addicts in this country. The ethical medical profession long ago drew the distinction between the legal and the illegal distribution of narcotic drugs. The illegality of this distribution lies in the underworld. It is a problem for the police to handle, and it must be remarked that if the police and secret service of the country have no better results in suppressing the unlawful distribution and use of narcotic drugs than they have shown themselves to have had in ten years' experience with the prohibition law affecting alcoholics, then in the Porter bill we have only another burden on the taxpayer and a seeming incentive towards the use of narcotic drugs. Certainly fortunes enough have been made out of bootlegging liquor to inspire other thousands of irresponsibles towards finding another gold field in drug traffic. We had in the Harrison Act a statute sufficiently prohibitory for all practical reasons. This new bill, with its new conditions, admonitions and restrictions, offers opportunity for employment for more government agents. Where liquor is concerned all the government agents on the payrolls today have not kept this country dry, nor have they managed to suppress crime. There is more open outlawry, more defiance and less respect for the law, and civil strife and raw murder—call it "gang warfare" if you will—than has been seen in this country since the wide-open days of the frontier. Even then it was considered a dastardly deed to shoot a man in the back.

No law ever directed against a human appetite or a human emotion ever yet was fulfilled in the spirit and only halfway in the letter. When Carter H. Harrison III was mayor of Chicago he fought the suppression of the vice district in Chicago. He placed restriction, but argued suppression could not be effected. The Twenty-second Street tenderloin was put out of business, but its habitués still go on the even tenor of their way. There is a little bit off that tenderloin in almost every bit of Chicago. No law ever made that was aimed at a vital human need, whether real or imaginary, has ever been enforced, nor will it ever be.

The Harrison Act, while it could easily have been dispensed with altogether, was still a comparatively fair compromise. The Porter bill stands out as yet another instance of the old story of the camel and

the tent. First the beast just wanted to smell the fire; then it just wanted to warm its nose, later its ears, and finally the man within the tent found himself kicked out into the storm while the usurping camel slept on his rug.

The Harrison Act took an inch. The Porter Act has taken a yard. It remains to be seen what the next step will be. Lay dictation of medical practice is one of the most insidious yet malignant dangers that science must face.

To be sure, the doctors of the country did manage to secure one amendment to the bill, as against its original proposals.

This amendment, made at the instance of the A. M. A., required the Secretary of the Treasury to coöperate with the states in enforcing state laws to prevent the abuse of narcotic drugs, and to coöperate, if necessary, in the formulation of state legislation to accomplish that end. The companion Porter Narcotic Bill, H. R. 9054, that proposed that the federal government take over the functions of the states with respect to the control of narcotic drugs and narcotic addiction, was thus left without justification or excuse for its enactment.

The request made on behalf of the American Medical Association for the incorporation in the bill of an amendment to the Narcotic Drugs Import and Export Act to permit the importation, for use in research by accredited laboratories, of derivatives of opium and coca leaves not obtainable in the United States, brought from the manufacturers of narcotic drugs in this country an agreement to manufacture any such derivative, whenever needed, in such quantities as may be desired for the purpose named. The suggested amendment was therefore not incorporated in the act.

The act passed creates a bureau of narcotics in the Treasury Department and provides for the correlation of its activities with those of the bureau of customs, the Public Health Service, and the narcotic services of the several states. The Federal Narcotics Control Board is abolished. The functions of that board, which relate solely to the importation and exportation of opium and coca leaves and their derivatives, and the functions of the bureau of prohibition so far as they relate to the enforcement of the Harrison Narcotic Act, are transferred to the new bureau. The bureau of narcotics will be under the supervision and control of a commissioner of narcotics, appointed by the President, by and with the advice and consent of the Senate, at a salary of $9,000 a year. The act authorizes the appointment by the Secretary of the Treasury of a deputy commissioner of narcotics, without reference to the civil service laws. Behold in this the blossom at least of a future crop of political plums fed and watered by the taxpayer! Doctors are taxpayers, too.

Now it so happens that the qualifications necessary for the appointment of either of these officers are not specified. Officers and employees of the bureau of narcotics may be vested with the authority of customs officers and employees and assigned to duty at ports of entry and other places, in order more effectually to check the smuggling of narcotic drugs into the United States.

The Surgeon General of the Public Health Service is authorized to study and investigate the abuse of narcotic drugs. He is required to estimate the quantities of crude opium and coca leaves, and their salts, derivatives and preparations, necessary to meet the normal and emergency needs of the United States, such estimates to be available for the guidance of the commissioner of narcotics in determining the quantities of crude opium and coca leaves that may lawfully be imported. The Surgeon General is authorized also to study the prevention and treatment of mental and nervous diseases, and the narcotic division in the office of the Surgeon General is hereafter to be known as the Division of Mental Hygiene.

Any good that is accomplished by this new narcotic drug legislation will depend upon the wisdom of the President in the selection of the Commissioner of Narcotics and the wisdom of the Secretary of the Treasury in appointing a deputy commissioner. That these two officials should be chosen from the ethical medical profession stands to reason, from the point of view of human welfare. Blanketing as it does all drug usage from import and manufacture to distribution through many channels, it would seem that this statute gives the federal government a large hunk upon which to chew. To put it mildly, the situation is so complicated that it offers endless opportunities for leakage. The chemist, the doctor, the veterinarian, the dentist, and possible commercial contingencies are all to be considered. These separate and several interests may sometimes be analogous, but they are scarcely coincident. It can be disputed with justice that a physician need not be appointed to handle commercial problems, and certainly there is enough lay dictation of medicine on hand now to save the medical profession from having its needs and requirements passed upon by some-

body who knows nothing at all about medicine, though possibly a terrible amount about business.—*Illinois Medical Journal.*

Humor Needed

Doctors, as a class, are probably possessed of as good a sense of humor as the "mine run" of business and other professional men. And yet, it often seems to desert us when we talk on medical economics and other questions involving our emotions and sentiments. This is nothing short of treachery, because there is no time when a sense of humor is more needful.

The word *humor*, as it is being used here, does not refer to wit, slapstick comedy, "wisecracking," etc., but to that quality Emerson was thinking of when he wrote:

> "What an ornament and safeguard is humor! Far better than wit for a poet and writer. It is a genius itself, and so defends from insanities."

We could profit from more Will Rogers in our gatherings and fewer who, after the manner of the political spellbinders, "point with pride" to the *status quo* and "view with alarm" any suggestion of a possible change in the social order.

A people who can laugh genuinely and at the right time will never go Bolshevik, nor will our profession's welfare ever be really jeopardized by wild-eyed, frowzy-headed and unwashed agitators. —H. E. D. in *Wisconsin Medical Journal.*

HOSPITAL NEWS

American Hospital Association Meeting

The week beginning October the twentieth will see in New Orleans the starting of the annual convocation of the American Hospital Association. This meeting will last for five days, and during this period many problems relative to hospital management will be brought up, which should be of interest not only to those whose primary duties are the care and running of hospitals and institutions, but also to those who hold positions on the medical and surgical staffs. The topics to be presented will deal not only with the cost-per-day-per-patient problem, the type of refrigeration best suited for a hospital, and comparable questions, but there will also be round table sessions on the relation of the staff to the hospital, the teaching of internes, the obtaining of autopsies, and similar subjects of considerable interest to the medical profession as a whole.

The general plan of the meeting is to hold open sessions at night. In the morning there will be round table discussions and in the afternoon section meetings. The round table discussions and the general meetings will probably be of particular interest to physicians. In the section meetings every phase of hospital life, administration, construction, and finance, will all be elaborated.

This meeting will be not only national in its scope, but also international, as delegates from many of the Central and South American republics will be present, as well as delegates from Canada. The broad range and the diversity of appeal of this annual meeting of the hospital association is indicated by the fact that there are usually registered for the session between 3,500 and 4,000 individuals.

Dr. Hammond at Davis Memorial

Dr. Frank Hammond, dean emeritus and professor of gynecology of Temple University School of Medicine, Philadelphia, was the scientific essayist at the September staff meeting of the Davis Memorial Hospital, Elkins, which was held last month. Dr. Louis Gaston Labat, formerly of the Mayo Clinic and now professor of surgery of the University and Bellevue Medical College, New York, will be the guest at the October staff meeting. The date for the October staff meeting has not yet been fixed. It has been announced that the October meeting is open to the medical profession in the state, and all members of the Association are invited to attend. Further information can be obtained by writing to Dr. B. I. Golden, superintendent of the Davis Memorial Hospital.

FROM OTHER JOURNALS

Socialized Medicine

Recently some of the medical journals have been running scare-heads concerning the growing menace of socialized medicine, and particular attention is called to the possibility of socializing many other things if socialized medicine becomes a reality. The theory is not unfounded, as some established conditions will indicate. We do know that already the medical profession is in a sense throttled by the dictations of insurance companies, industrial concerns, and compensation boards. There is a growing tendency to throw all kinds of medical and surgical services into a hopper and grind it up into parcels that are dealt out on a department store basis at bargain prices, irrespective of quality of service. In

some quarters we hear a great hue and cry voiced in more than one lay periodical of large circulation to the effect that the cost of all medical and surgical service is too high, but not one word is said concerning the return for investment, time and skill put into the practice of medicine by those who follow the profession. Little is said about the high cost of legal services, and no criticism is offered concerning the extravagance of the average American citizen who, if he used any judgment in his expenditures, would have ample funds to pay for medical and surgical services at prevailing rates. We have been accused of being alarmists concerning the growing tendency of the public to accept paternalistic or socialistic medicine, but we fail to understand how any one who carefully analyzes the subject can fail to see the dangerous position we occupy at the present moment as regards the economic position to be occupied by medical men within the next few years unless something is done to stem the tide of socialistic tendencies that are growing so rapidly and so effectively. The solution of the problem rests with the medical profession, which, if it acts as an undivided organization, fighting as a unit for its economic position in the world, will accomplish something. Up to the present time we have been inclined to act individually in our reaction to economic questions, and we have been altogether too devout and conscientious in our worship of an old fetish concerning the impropriety of looking upon the practice of medicine as a business. It is not necessary to lose identity as worthy and respected members of a great profession, but it is necessary to take some decided action toward maintaining our own economic independence, and if we do not take some such action, then we are doomed to see the members of our profession sink to the level of white-collared clerks or salaried employees. It is no extravagant statement to say that within ten years we are going to have the equivalent of paternalistic or socialistic medicine, and with it a decided lowering of the present economic position of the members of the American medical profession in general unless some concerted action is taken to stem the advance of this growing evil.—*Indiana State Med. Journal.*

Importance of Careful Statements

Physicians who are called upon to address public gatherings or contribute to scientific or popular magazines are required to be cautious in the way in which they express personal opinions or draw general conclusions from scattered instances.

Several statements within recent months which have been attributed to certain widely known members of the profession have been more damaging than helpful to the harmonious relationship and understanding which should exist between the profession and the public.

It is perhaps true that some of these authorities have been misquoted in the press. Possibly the arguments which some of them have advanced have been misunderstood and misinterpreted. Nevertheless, all physicians should avoid furnishing unsympathetic and radical groups with ammunition which, through misinterpretation, may be used against the profession and, above all, have a harmful effect on the proper relationship which should exist between the public and the medical profession.

In a recent editorial, the editor of the *New England Journal of Medicine* made some pertinent comments on this subject, in part as follows:

"Physicians as a class should understand that reactions of the average person to statements may arouse misunderstanding or resentment. The old admonition to cultivate the wisdom of the serpent and yet be as harmless as doves seems to apply at the present time when doctors unburden their minds on subjects which appeal to the laity.

"It is common knowledge that the report of the saying of an eminent physician with respect to the proportion of errors in diagnosis has been seized upon and quoted by many in arguments designed to confute the pleas of doctors. It may be that the statement has not been correctly reported, and, too, it may be that serious abuses exist in other parts of the country more than in the region with which we are familiar; and, further, that the author of the statement has facts at his command justifying his accusation. However, those who are engaged in the work of trying to convince the public of the duty to support hospitals may wish that, if abuses exist, the effort to correct them should be inaugurated without public denunciation of a general character. We believe in specific statements of wrong doing, but deplore sweeping charges of objectionable practice without corroborative facts.

"We respectfully suggest that, unless it seems to be necessary in certain cases, physicians should be careful to avoid criticizing hospitals or making other statements which may not have specific application. By all means, doctors should try to bring about reforms when indicated; but it is not good policy to furnish unsympathetic persons with arguments which will do harm."—*Ohio State Medical Journal.*

The Spirit of the Genus Anti

All know the delightful story of the puzzled immigrant who, quizzed by the ward boss whether he was a Democrat or a Republican, could only ask, "Have they a government here? Then put me down as agin the government." However often repeated, this story is never old because it is so freshly and variously illustrated every day about us. There is, taken in a lump, a preposterously large number of persons who would go crazy or die if they could not array themselves as "agin" something. In some instances the psychologist is compelled to diagnose his cases as instances of inflammatory egotism, delirium grandiosum, etc., etc., because there are not infrequently the most patent evidences that the anti is far more interested in himself than in the cause antied. These characteristics are fatally likely to become the genuine and principal causes of reactionism and stolid conservatism. All good and careful persons are by sheer disgust compelled *stare super antiquas vias*, so that the anti is the very worst enemy of the cause he advocates. He produces the very evil he rails at. If his cause is good, or has any element of truth in it, the anti will contrive by his narrow violence and vainglorious captiousness to render this good and true both evil and false, and in disgust all sensible persons will "shut up" and disassociate themselves from the cause made ridiculous by its advocates. In these days of antitoxins let us hope that a great benefactor will arise and that he will discover some anti-antitoxin as a universal prophylactic against the scourge.—*Pennsylvania Medical Journal.*

Baby Identification

When an event occurs in any part of the country of such nature as to make the front page of metropolitan newspapers for several days, the mind naturally turns to the possibilities of the same thing occurring in our immediate locality, especially if the incident is one that might happen to any person placed in similar circumstances. Such an occasion was the report of a possible exchange of babies in a Chicago hospital which focused attention on hospitals all over the country.

After a survey of identification procedure in St. Louis hospitals, authorities are united in declaring that there is but the remotest chance of a switching incident such as that reported to have occurred in Chicago. Dr. Max C. Starkloff, health commissioner at St. Louis for thirty-five years, says: "I have yet to hear of a baby mix-up in St. Louis, and the strict means of identification employed practically obviate the possibility of a mother getting the wrong baby."

An elaborate system of checks and counterchecks, said to represent the last word in baby identification methods, is used in St. Louis Maternity Hospital. Before the baby is taken from the delivery room a bracelet of beads, each bead bearing black letters that spell the baby's last name, is placed on the baby's wrist. If twins are to be recorded, the letter "A" precedes one name, "B" the other. In addition to the bead bracelet, a linen tape bearing a serial number is sewed about the other wrist.

A baby Bertillon room is maintained, where records are taken of footprints which are said to hold true for life. An inked roller is applied to the feet of the infant, then to a blotter. The footprints are stamped on the bottom of the chart, which also chronicles such details as weight and rate of growth. The crib is also marked. No identification tag is allowed to be removed until the baby is in the arms of the mother, ready to leave the hospital.

Other St. Louis hospitals vary the means of identification, as by using a necklace instead of a bracelet. In one hospital the baby never leaves the mother's room, but nevertheless the infant wears his identification tag.

"The identification tags guide us," remarked one nurse; "but the mothers recognize their babies as soon as the cart appears at the head of the ward. How they pick out their own when yards away is hard to say, but they do it every time."

But should a mother become confused, proof is there, from footprints to necklaces and numerous records.

In Kansas City, similar elaborate precautions are taken by all first-class hospitals, and authorities there declare it is practically impossible for babies to be switched. The investigation discloses also that the hospitals in St. Joseph, Springfield, Joplin, and other towns where several babies are apt to be born on one day, have established precautions to obviate the possibility of a mistake in giving a baby to its rightful mother.

With the view of further safeguarding against the possible switching of babies, the Chicago Medical Society has appointed a committee to draft legislation providing a standard system of marking newborn children at hospitals. With the appointing of the committee, Dr. John R. Harger, president-elect of the society, said that, while all the hospitals have marking systems, there was need for a uniform plan

which would include the signatures of two witnesses in legal form.

One prominent obstetrician has suggested that physicians and others in the delivery rooms exercise great caution in conversation while the mother is under the anesthetic. He mentioned the instance of a patient partially anesthetized who heard and remembered the word *boy* mentioned by the attendants, but did not hear or remember the rest of the conversation. When this patient was presented with a girl baby she objected strenuously to the "substitution," declaring that she heard the attendants say her baby was a boy.—*Missouri State Med. Journal.*

Medicine and Industry

Dr. Edward H. Ochsner, of Chicago, an outstanding authority on medical economics, in a recent talk before the North Shore Branch of the Chicago Medical Society, made some very pertinent remarks relative to some present dangers to medicine. We quote:

"That, next to stability of government, honesty of administration and the general intelligence of the people, the welfare of the nation depends more upon the quality of medical service which is rendered to the people than upon any other one thing.

"The longevity, health, efficiency and happiness of the people depend more upon the integrity, ability and industry of its medical profession than upon anything else.

"The allied professions of medicine, dentistry, and pharmacy are today giving the American man who is loyal to his country the greatest incentive to fight socialized medicine that any nation has ever had in the history of the world.

"If the above three postulates are true, then it is the plain duty of every physician to see to it that the present standard of medical efficiency is maintained, and the part of wisdom of every layman to encourage the regular medical profession so that it can maintain this standard and gradually make further improvements in order that the citizens of this country may enjoy the greatest possible degree of health, and it is the plain logical duty of every red-blooded medical man who is loyal to his country to fight to the last ditch to prevent the socialization of medicine or its control by lay monopolists.

"The purpose of the study of economics is to safeguard and promote the material resources of a nation or a group within a nation. The study of medical economics has for its primary object the safeguarding and promoting of the material welfare of the medical profession, and for its secondary object the promoting of the general welfare of all the people.

"The main dangers to medicine, as he sees them, are: Lack of balance between the main divisions of medicine; too great specialization with resulting relative overemphasis on the non-essentials; petty jealousies within the profession itself; misinformation of the true purpose of medical charity; misinformation as to the cost of being sick; misinformation as to the quality of medical service rendered to the man in moderate circumstances; misinformation as to the qualifications of the average medical man; and lay and political domination and control of the practice of medicine.

"The man who once accepts charity, particularly if it is not a case of dire necessity, is not quite as fine a man as he was before. He has lost something that nothing can replace. Many of the innumerable charitable organizations in existence are doing more, and have done more, to undermine character than can ever be evaluated; consequently, it is a serious question whether or not many of them have not actually done more harm than good.

"It is far better to be a little hungry, a little cold, or even a little sick physically, than to have lost one's self-reliance and self-respect and to have become a human parasite. Parasitism is today the corroding canker of American life, and nothing has fostered this more than unwise medical charity.

"The onus of the increased cost of being sick is being placed upon the shoulders of the medical profession most unjustly; instead, it should be placed upon the hospitals, and the public in general, where it justly belongs.

"Another common assertion is that the man with a moderate income is not getting adequate medical service. This statement is essentially untrue. The man of moderate income is, on the average, getting better medical service than the very poor and the very rich. Probably not so much paraphernalia is employed in treatment, nor does he receive so many fancy and unnecessary laboratory tests and examinations, but he is getting the essentials to make him well or keep him well.

"Another statement which one often hears is that the average practitioner of medicine is incompetent. This is equally untrue. No other group has rendered a greater service to society, for it has given good health and length of life, two of the greatest blessings man can possess, to an ever-increasing number of men and women.

"What would the captains of industry say if the medical profession attempted to meddle with their affairs? Frankly, the medical profession has solved its problem more nearly and more satisfactorily than the industrialists. Frankly again, captains of industry had better pay higher wages or take smaller profits rather than acquire great fortunes and use them in pauperizing the public.

"American medicine is facing a crisis today such as it has not faced in our day and generation and probably not in its history—a crisis towards which many of us have realized that it was slowly drifting. The question today is, Shall medicine continue in the "straight and narrow path" which it has followed throughout the centuries, or shall it deviate therefrom and permit lay domination and control to direct it? There is no other group of men who have persistently maintained such high ideals both in theory and in practice, and a concerted effort is being made by misinformed laymen to destroy these ideals.

"He is a firm believer in the doctrine that right always triumphs, provided only that it is defended with the same vigor, intelligence, determination, and persistence with which wrong is usually championed. The medical profession, being in the right, will be able to defeat those who are unwittingly or selfishly working for the socialization of medicine, state medicine, and monopoly-controlled medicine, all of which are identical in their effect."—*Illinois Medical Journal.*

Life Expectancy of Physicians

Physicians keep more irregular hours and work under greater nervous, mental and physical tension than almost any other group of the population.

What effect do these and other demands of the profession have on the life of the medical profession generally?

This question is difficult to answer, naturally, but an article appearing in the Statistical Bulletin of the Metropolitan Life Insurance Company produces some interesting data on it.

"Physicians, on an average, do not live as long as the general run of policyholders of the Metropolitan Life Insurance Company," the bulletin stated. "They do live a little longer, however, than the general male population of the country as a whole.

"Their life table shows that at the age of thirty years—we may say, at the beginning of his career—a physician has an expectation of life of thirty-eight years, just two years less than the holder of an ordinary policy in the Metropolitan Life Insurance Company at the same age, and barely one year more than the man in the general population.

"Clearly the personal advantage to himself, which the doctor must derive from knowing when the human body is out of sorts and what to do about it, is more than counterbalanced by the exacting duties, the irregular hours, the liability to emergency calls at any and all times and in all weathers, which fall to his lot, especially in country and small-town practice. Yet doctors are a highly selected lot; they can not even begin practice until they have stood the grind of a medical curriculum, followed, in most cases, by a period of apprenticeship in hospitals. There is a certain social selection also; all of which must tend to make medical men a group with better than average physique. In spite of these initial advantages, as he runs his life course the physician is constantly working against odds, and in the end he is left with only a meager margin of advantage over the general population of the country."

The following figures point out statistically some of the conclusions drawn in the article:

Age	*Expectation of Life in Years*	
	Physicians	General Population
30	38.01	37.10
40	29.49	28.82
50	21.67	21.11
60	14.63	14.26
70	8.90	8.82

During the year 1928 the American Medical Association *Journal* published the obituaries of 2,792 physicians of the United States. The average age at the time of death was 63.1 years. There was not one centennarian in the entire group, but 118 lived to be 85 or more. In the age period 80–84, 173 died; 75–79, 285; 70–74, 393; 65–69, 362; 60–64, 374; 55–59, 384; 50–54, 279; 45–49, 168; 40–44, 100; 35–39, 74; 30–34, 47; and 28 died before they were 30 years of age.

Many physicians neglect their own health and fail to live up to the rules they lay down for their patients. Those who possess the temperament which permits them to relax, forget work at certain times, and engage in recreational and social diversions, are indeed fortunate. Those who do not have this valuable characteristic should endeavor to cultivate it. The physician owes it to himself, his family, his patients and his profession to keep himself physically and mentally fit.—*Ohio State Medical Journal.*

Clinical Medicine

There are two major forms of quackery in medical practice: that based purely on empiricism, and that based purely on the medical sciences.

The pure empiricist bases his method upon tradition. He scoffs at modern advances and sneers at laboratory methods. He is not always an old graduate. He often is a recent graduate who has not been able to combine preclinical sciences and older methods. It is he who distinguishes between ward work and the pathological laboratory on the basis of clinical and non-clinical practice. He has not recognized the microscope, test-tube and platinum loop as instruments of clinical practice.

The pure scientist, on the other hand, pretends, by the use of chemistry and microscopy, to make of medical practice a pure science. He depends upon the clinical laboratory very largely for his diagnosis. The results of the laboratory investigation reveal a diagnosis or he is unable to reach a conclusion. It is he who, not doing his own laboratory work, expects that his technician or pathologist will, without the aid of any outside information, be able to pronounce the name of the malady. He organizes a routine for his office which is based upon early reports or very meager evidence. Problems which are in the experimental stage, if methods connected with them can easily be organized into an office routine, are considered to be solved and the results of such methods are used as a basis for clinical action.

These two types of practitioners are not necessarily quacks. A quack is one who consciously appeals to this or that credulity of mankind for the purpose of personal gain. The empiricist may, because of faulty training or lack of training in the more exact methods of clinical practice, be honest in his conviction and methods. He may, on the other hand, be using an old and well-known weakness of humankind for the promotion of his own ambition. The sentimental appeal of the "old" is strong. A strong sentiment for the methods of the "good old doctor" is still alive.

The scientific doctor may or may not be a pretender. He, too, because of overemphasis of the medical sciences in his training, may be honest in his effort to reduce medical practice to a science. However, this field is also fruitful for commercialism. There is no small part of the population who are attracted to anything which is labeled modern. Anything which pretends to be new has sufficient endorsement.

These two types of practitioners are easily recognized by those who are well informed. The man who is doing credit to the profession and at the same time rendering the greatest service to patients is critical. He is interested in clinical practice and human welfare. He is no faddist. He makes no distinction between ward methods and laboratory methods. They are recognized as methods of clinical importance. He is critical of both and accepts neither alone. The data accumulated in the ward is complementary to the data secured in the clinical laboratory. He is humble and makes no pretense to omniscience.—W. D. S. in *Wisconsin Medical Journal.*

The Psychology Craze

When one sees everything explained from Nero's personality to Hoover's election on the basis of psychology, he begins to see the ridiculous side of the situation. Freud's contribution to science must rank with those of the greatest, and while it has thrown much light on the subject of psychology and revealed much in the field of psychopathology, the real, true evaluation of psychoanalysis in the art and practice of neuropsychiatry still remains speculative. The harmful effect of Freud's contribution was not due to Freud, but to Freudian disciples. Here was something new. Here was something to be capitalized. The lure of the press and the platform was too great; human frailty yielded. Medical ethics, soothed by the present-day practice of medical enlightenment through the press, gave way to the urge of personal publicity. Shall youth lend its listless ear to psychoanalytic whispers, "Do not repress," or to the voice of Moses through the ages, "Thou shalt not"? Herein lies the conflict.

It was most unfortunate that Freud regarded the basic instincts of purposive activity to be wholly the sex urge; for the theory of purposive activity, sensorship, conflicts, repressions, dreams, symbols, sublimation, projection, and rationalization is not half-bad phraseology in expressing conditions and phenomena which psychiatrists had long before recognized but had not clothed with such a delightful terminology. For example, it is much easier to ask, "What is your complex or conflict?" than to say, "What are you worrying about?" It is much more polite to say "repress" or "sublimate" than the old alienist's way of saying "Forget it—concentrate on something else." And to say to the patient, "You are rationalizing," is better than to say "You are

lying." All of which leads us to ask how much of the Freud idea is really new except the phraseology, the sex theory, and interpretation of dreams. However, the most unfortunate part of the entire situation is that Freud and his disciples did not foresee the harmful effects of such teachings. As a result of the bungling of Freud's disciples, the old master himself must pass on not fully appreciated.

And so we must wait, but in vain; for another century must pass for a true evaluation of Freud's work. In the interim one prays for the advent of another fad, something less dangerous, less harmful, something more hopeful, something that will lure the masses to more sober thinking, something that will return to youth his former ideals of truth, virtue, and morality.—*Pennsylvania Medical Journal.*

Serologic Studies

Interpretation of positivity as used in the percentages and results presented by Mary C. McIntyre and Robert L. Gilman, Philadelphia (*Journal A. M. A.*, August 3, 1929), is a Kolmer-Wassermann reading of 33,000 or above and a Kahn reaction of 2++ or above. The Kolmer modification of the Wassermann test and the Kahn test were performed on identical serums in 1,767 tests, showing 83.3 per cent agreement in proved syphilitic cases and 96.7 per cent agreement in proved non-syphilitic cases. Disagreement in proved syphilis between the two tests amounted to 16.7 per cent, of which 12.9 per cent were positive with the Kolmer-Wassermann test and 3.8 per cent were positive with the Kahn test. Disagreement in non-syphilitic cases was 3.3 per cent, the Kolmer-Wassermann test being positive in 0.4 per cent and the Kahn in 2.9 per cent. In twenty-one cases of early untreated syphilis, the Kolmer-Wassermann test was positive in each instance; the Kahn test was completely positive in fourteen, partially positive in six, and negative in one. Treatment would appear to account for the author's percentages of positive reactions in proved syphilis. They believe with Kahn that the simplicity of the Kahn test is overemphasized and that it needs exactness in reagents and technique. According to their results, the Kolmer test yielded the higher percentage of true positive reactions in syphilis and the lower percentage of probable non-syphilitic reactons in the controls. Sufficient evidence is not on hand to warrant the supplanting of one test by the other, and the clinician and his patient are best served by the performance of both tests.

Vitamin Content of Milk

The milk from a herd of stall-fed cows was tested by Florence L. MacLeod, New York (*Journal A. M. A.*, June 18, 1927), for an entire year to determine its antiscorbutic potency. The greater antiscorbutic value of the milk of the pasture-fed cow is doubtless due to the antiscorbutic vitamin content of the fresh grasses which the animal receives, since the animal body probably does not synthesize this vitamin and is therefore dependent on its food to provide an adequate amount of it in its milk. Ensilage being the principal source of the antiscorbutic vitamin in the ration of the stall-fed cows, it appeared possible that animals fed an ensilage of good quality might produce a milk of high antiscorbutic value. Guinea-pigs were used in the experimental work. It is concluded from this investigation that 50 c.c. of the milk used in these experiments, fed six days a week, is sufficient to protect a 300-Gm. guinea-pig from scurvy at any time of the year. As a result of this work, it can be concluded also that the milk of stall-fed cows which are given a well-balanced, uniform diet throughout the year will not show seasonal variation in its antiscorbutic value. By including an ensilage of good quality in the ration, the antiscorbutic potency of the milk may be maintained at a high level. Hess estimates that an infant requires five times as much vitamin C as a guinea-pig for protection against scurvy. On the basis of this estimate and these experimental results, it would seem safe to conclude that raw milk from cows fed as described will furnish sufficient antiscorbutic vitamin to protect an infant from scurvy.

Superstitious Temperament

There seems to be such a thing as a superstitious temperament, declares John Lee Maddox in a discussion of superstitions, ancient and modern, in the January issue of *Hygeia.* When a person has this kind of temperament, mental acumen and education count for nothing. Dr. Samuel Johnson, with his ponderous intellect and splendid culture, believed that he would have bad luck unless he touched every pole and post as he walked along a street or road. John Henry Newman, who possessed as subtle a mind and as thorough an education as any man of the nineteenth century, nevertheless believed that all the pieces of wood in the churches of Europe alleged to be parts of the cross of Christ are authentic—probably like the loaves and fishes, multiplied by divine power.

MONTHLY MORBIDITY REPORT

BY COUNTIES

AUGUST, 1930	Chickenpox	Diphtheria	German Measles	Influenza	Measles	Ophthalmia Neonatorum	Poliomyelitis	Scarlet Fever	Smallpox	Tuberculosis, All Forms	Typhoid Fever	Whooping Cough
Barbour											10	
Berkeley								1			2	
Boone								6			5	2
Braxton		2								1	2	1
Brooke		1						1				2
Cabell		1						4			9	1
Calhoun											2	
Clay									1			
Doddridge				4							1	
Fayette		2						2			23	
Gilmer								1			1	6
Grant					1						5	
Greenbrier							1		1			
Hampshire											6	
Hancock			2			1		1				
Hardy											2	
Harrison	1	3			5		1	6			18	38
Jefferson	1						1				1	
Kanawha	1	3			1			3	1	5	26	17
Lewis	1	6						1		1	14	3
Lincoln					15	1					5	13
Logan			1		1			2		1	20	
McDowell					2				9	4	2	
Marion	1	5						16		6	5	1
Marshall								1		3	1	
Mason		2									1	
Mercer		1					1	1			13	
Mineral	4	2			9					6	4	31
Mingo								1	2		1	
Monongalia		2	1					3		3	3	
Monroe											1	
Morgan												1
Nicholas											5	
Ohio	1	3						2		6	3	13
Pleasants		2						5			2	4
Pocahontas											1	
Preston		1									5	
Raleigh		2								9	10	4
Randolph											3	
Ritchie	1		2		6							4
Tyler				2							2	2
Upshur											1	
Wayne		4									6	
Wetzel											9	
Wood		2					1	1	4		10	
Wyoming				4	3				1	1	5	2
TOTALS	15	44	6	10	43	2	5	58	19	46	245	145

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OPHTHALMOLOGY AND THE GENERAL PRACTICE OF MEDICINE *

By T. W. MOORE, M.D.
Huntington, W. Va.

The relationship between ophthalmology and general practice, through the middle and latter part of the eighteenth century, was not a very cordial one. The practice of ophthalmology, like other branches of medicine at that time, was with little knowledge, much quackery, but sometimes, as Harry Friedenwald[1] tells us, with the development of great skill, the result of personal practice as well as training, often handed down from father to son through several generations. This applied particularly to the couching of cataracts.

We are told that Chevalier Taylor, who lived from 1708 to 1768, traveled throughout Europe and even in Asia, appearing with much pomp in a coach covered with paintings of eyes.

Wenzel,[2] of Paris, was another of the same type, although not so well educated as Taylor, who had been a student of Boerhaave. Wenzel became so celebrated that he was sent for by one of the most famous courts of Europe in 1775 and operated upon one of the ladies in waiting to Maria Theresa. Quite a contrast from operating along the highways of France, upon beggars and vagrants, wherever he happened to meet them. His technique was to hold the head between his knees and, bending over the victim, couch the cataract.

These itinerant oculists were contemptuously regarded by members of the medical profession, as the following lines will show:

> "Yet they that very hardly teeth can draw,
> Unless they spill much blood or break a jaw,
> Will deale with eyes and boast of famous facts
> They have performed in couching cataracts."

However, Wenzel's stay in Vienna resulted in much good, for he was employed to teach what he knew to some young physicians, one of whom was Barth, whose pupil, Beers, afterwards held the first chair of ophthalmology in Vienna.

Ophthalmology seems to have developed by crises. The discovery of the ophthalmoscope by Helmholtz in 1851 revolutionized the study of eye diseases, but did not, until many years later, bring about a closer unity of ophthalmology with internal medicine, ophthalmology being regarded as a branch of surgery, and not until 1877, when Foerster[3] said: "The separation of ophthalmology from surgery was necessitated by the growth of both departments. In its stead ophthalmology sought and found a close union with medicine, with which it in truth stands in more intimate relation than with surgery."

But it remained for Osler to inaugurate the practice of carrying the ophthalmoscope with him in his ward rounds and insisting upon the students accompanying him, making use of it. The perfection of the electric ophthalmoscope has made this possible

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with those who may not have acquired great technical skill in ophthalmoscopy.

The application of asepsis to surgery changed completely not only the methods but the extent of surgical procedure in its relation to ophthalmology.

Then Donder's[4] book on "The Nature and Consequences of Anomalies of Refraction" brought to attention many and varied symptoms of asthenopia. This was probably not read extensively outside of those devoting especial attention to ophthalmology, but the profession awakened in 1875, when Mr. Brudenell Carter[5] reported his very startling case as follows:

"The patient, a young man, was brought to me by his father with the statement that he had some obscure and intractable brain disease, and with a request that I would make an ophthalmoscopic examination, in order to see whether it would throw any light upon the state of the cerebral circulation. On inquiring into the history of the case, I was told that the patient, eighteen months previously, had been in perfect health, and reading for honors at Oxford, with every hope and expectation of obtaining them. He was suddenly attacked by symptoms which an Oxford practitioner attributed to some affection of the brain, and he was advised to throw up his work and to leave the university. At home, the advice thus given was confirmed; and it was also confirmed shortly afterwards by an eminent London physician, who prescribed a long period of brain rest and a voyage to Australia as the best means of obtaining it. The patient actually went to Australia, and returned no better. He was then told that he must abandon the idea of succeeding to his father's large commercial undertakings, and that he must also abandon a marriage engagement which he had contracted prior to his breakdown In other words, his prospects in life were blighted; and his despondency was commensurate with his misfortune.

"On inquiring further, I found that the so-called brain symptoms resolved themselves into inability to read. The memory and intelligence were perfect and the general health was good; but, after a short period of reading, the letters and words became misty, and the mistiness was followed by vertigo. Perseverance in the effort produced palpitation of the heart, headache, and occasional sickness. Vision was perfect, but there was myopia, — 1/8 (— 4.50 D) of both eyes, and spectacles had never been worn for any purpose. With these data, the nature of the case seemed clear. My inference was that the patient had been accustomed to read somewhat within his far point, say at seven inches, and that his convergence power had enabled him to do this, without noticeable inconvenience, up to a certain time. When he began to read for honors, and hence to read continuously for long periods, the strain on the internal recti became too great, and they were unable to continue the effort demanded from them. The consequent relaxation of convergence produced double vision, in which, if the two images did not become distinct, they crossed one another in such a way as to confuse the outlines of the words, and were sufficient to occasion vertigo. The grave view taken of the case by medical authority brought in a new element of depressing emotion, which reacted upon the heart, disturbed the general cerebral circulation, and produced headache and sickness. When the attempt to read was repeated, the old symptoms were reëxcited by the combined effect of the muscular sense and of expectant attention, and so the malady was maintained. I assured the patient that his supposed brain disease was all moonshine, and prescribed for him two pairs of concave spectacles, one of — 1/8 (— 4.50 D) for ordinary constant wear, one of — 1/14 (— 2.50 D) for reading at fourteen inches—telling him at once to begin reading for half an hour at a time three times a day, and never to let his book come nearer than the prescribed distance. He called on me three weeks later to report that he was quite well, and that he was about to engage both in matrimony and in business. Since then nearly two years have elapsed, and I have had the satisfaction of hearing that the cure has been permanent."

This was followed in this country, in 1876, by Weir Mitchell's[6] very comprehensive article, a part of which reads:

(1) "What I desire, therefore, to make clear to the profession at large, is that there are many headaches which are due to the disorders of the refractive or accommodative apparatus of the eyes; (2) that in those instances the brain symptom is often a most prominent and someitmes the sole prominent symptom of the eye troubles, so that while there may be no pain or sense of fatigue in the eye, the strain with which it is used may be interpreted solely by occipital and frontal headaches; (3) that the long continuance of eye troubles may be the unsuspected source of insomnia, vertigo, nausea, and general failure of health; (4) that in many cases the eye trouble becomes suddenly mischievous, owing to some failure

of the general health, or to increased sensitiveness of the brain from moral or mental cause."

After quoting the above, de Schweinitz[7] adds: "Methods have been elaborated, instruments of precision improved, and the list of interpretations of eye strain extended; but otherwise little has been added to this complete and compact presentation of the facts of the case."

General anesthesia advanced ophthalmic surgery as it did all branches of operative technique. Then in 1884, when Dr. Carl Koller found that an anesthesia sufficient for practically all eye operations could be produced by the use of cocaine, another impetus to and simplification of eye surgery was brought about. This has been a great aid in the study and treatment of injuries and other painful conditions of the eyeball.

Verhoeff[8] tells us that his experimental studies have led him to conclude that all localized areas of chorio-retinitis where syphilis is excluded are tuberculous.

Another nationally known ophthalmologist[9] recently stated that over eighty per cent of his cases of this disease (chorio-retinitis) under like conditions (*i.e.*, where lues is excluded), are tuberculous.

We have long been familiar with tuberculous conditions of the anterior segment of the eye, and ophthalmologists have given much attention to the tuberculin treatment of these diseases—probably with an enthusiasm and optimism not justified. So it is fortunate that one of our learned ophthalmologists offers the following words of caution, which are most pertinent and would do credit to any internist. He says: "I felt,[10] and still feel, that as tuberculosis was a chronic disease and subject to periods, more or less long, of quiescence, often only to light up again in fresh attacks, it was incorrect to speak of a curse. Any one who has ever had tuberculosis—and almost every one has had it—has a focus lying quiescent in the body. Whether this focus is going to light up and become active, and other foci appear, depends on a large variety of circumstances. Under conditions of lowered resistance which may occur in every one, the tuberculous focus lights up and one has a fresh attack. Thus, unless a patient has been observed over a long period, one can not really know much about his disease or form a correct idea of what one's treatment has accomplished. Frankly speaking, and with due reference to the adherents of tuberculin therapy, we do not believe that most of the articles written about the use of tuberculin tell the whole story, because they are based on series of cases which have been observed over much too short periods. We said in our article that, 'like tuberculosis of the lung, ocular tuberculosis may be arrested, but it is incorrect to speak of a cure.' Therefore, 'until large series of cases shall have been followed throughout life we shall not know the truth about ocular tuberculosis.'

"Tuberculosis of the eye, like tuberculosis elsewhere, is often characterized by recurrence.

"The object of treatment is not only to overcome the present attack but, as far as possible, to prevent recurrence. Moreover, it should be remembered that tuberculosis may show itself in other parts of the body, and pulmonary tuberculosis may appear in these cases and lead to a fatal issue.

"The mainstay in the treatment for all forms of tuberculosis consists in measures to build up the general resistance of the patient, fresh air, rest, proper diet, helio-therapy, long-continued treatment and observation. In our enthusiasm for a specific form of therapy, let us not forget the foundation stones in the treatment for this disease."

Holmgren[11] traced the wrecking of two trains, which happened to be a great disaster in wartime, to color blindness. This has resulted in the adoption of color tests for the operating employees of the majority of railroads and of many industrial plants. Whilst the tests are not always made by ophthalmologists or even by physicans, where a defect of any magnitude is discovered the applicant is usually checked over by the one or the other. Then, too, this has proven of great value in diagnosing lesions of the nervous system which, taken in conjunction with the study of the fields of vision, both as to contraction and scotomata that may exist, gives information that can be obtained in no other way. This applies, as you well know, not only to lesions of the central nervous system, such as tumors, hemorrhages, etc., but also to focal infections and particularly to the drug; in fact, all the amblyopias.

These are always of special interest to all members of the medical profession. The ones most frequently encountered are those due to quinine and its ally, ethyl-hydrocuprein, tobacco, alcohol (both methyl and ethyl), lead, ergot, male fern, santonin, the arsenicals, especially atoxyl and tryparsemide (Friedenwald[12]). Their action is so very different and selective that their study is most fascinating; *e.g.*, quinine is supposed to produce blindness by the ischemia of the retina, resulting from the narrowing of the retinal arteries which is observed at the onset of the blindness. This occurs only after large doses

are taken; but, as the drug is a popular abortifacient and, when taken for this purpose, is in large doses, it behooves us to bear this in mind.

Tobacco, to which only a few users are susceptible, has a selective action for the papillo-macular bundle of fibres in the optic nerve, and through them produces a central or paracentral scotoma, particularly for red and green.

It is thought that wood alcohol attacks the whole nerve. Its characteristic blindness has not been produced in the laboratories, where the chemically pure product is used; so it has been concluded that possibly the blindness may, in a measure, be due to the associated impurities, such as fusel oil. It has also been questioned as to whether the atrophy may not be due to the gastrointestinal disturbances, with the anemia and enterogenous poisons produced. This condition may result when this poison is taken in small quantities, and even when inhaled or absorbed through the cutaneous surface.

It is not known how arsenic produces atrophy of the optic nerve.

Ergot and naphthalin will produce cataracts, but is not likely to enter into consideration in the practice of medicine, being of interest chiefly in animal experimentation. Of much more importance is the fact that parathyroid tetany will produce cataracts; this is not infrequently seen. It is also known that cataracts may follow heavy radiations of either x-ray or radium. These radiations, Friedenwald[13] tells us, need not be applied directly to the eye, but may result from excessive radiation of the tissues anywhere about the face, as in the treatment of cancer or the nasal sinuses.

I am going to give you a review[14] of a number of diagnostic signs in eye examination that indicate disease elsewhere. Iritis with development of nodules, tuberculoma and choroiditis require pulmonary examination. The physical examination may prove negative in children, but screen examination sometimes reveals a miliary tuberculosis. When choroidal tubercles are found, they exclude typhoid and epidemic meningitis. Keratitis parenchymatosa in children is a sign of congenital lues, even if the Wassermann is negative. In such cases we often find, in addition, a high palate, Hutchinson teeth, deafness, and anterior choroiditis. A salt-and-pepper fundus is a sign of syphilitic choroiditis, and aids in the differential diagnosis of lues in adults. Episcleritis, iritis, and tubercular or rheumatic choroiditis are of significance. Loss of pupillary reflex is a sign of tabes. Atrophy of the optic nerve, or even of the third or sixth nerve, often shows marked diminution of the green and red visual fields. General paralysis can produce similar symptoms.

The papillo-macular fascicles of optic fibres are often diseased in disseminated sclerosis. We find the temporal half of the papilla is pale, and is shortly followed by amaurosis, but vision soon returns; only a central scotoma remains, usually unperceived by the patient. Also, paralysis of the eye muscles is early. Nystagmus is of diagnostic significance.

Bilateral congestion of the papilla indicates a congestive or inflammatory process in the brain. Neuritis of the optic nerve may show the same ophthalmoscopic picture, but causes greater visual disturbances. The most of these cases are due to tumor, a few to lues, tuberculosis, cerebral abscess, or hydrocephalus. Disease of the hypophysis produces a bitemporal hemianopsia; if the fissure calcarina is involved (optic area) there is a homonymous hemianopsia. Conjugated deviation is a sign of disease of the peduculus or pons cerebri. Metastatic ophthalmia is characteristic for epidemic meningitis; it begins on the iris, uvea or retina, and ends with amaurosis.

Extreme diminution of the field of vision, as well as ring scotoma, can sometimes support the diagnosis of hysteria; stronger disturbances in orientation are lacking.

Refractive disturbances and glaucoma can cause severe headaches and vomiting. If difficulty in accommodation occurs about four to six weeks after angina, it is a sign that it was diphtheria. Retinitis albuminurica often occurs as the first warning sign of renal disease, which need not necessarily be severe. Disturbances of vision with white foci and hemorrhages around the macula, while the optic nerve is free, indicates diabetes; iritis and cataract likewise require examination of the urine for sugar. Myopia, appearing suddenly and progressing rapidly in middle age, is also a sign of diabetes, in which the lens swells and grows clouded.

Leukemia and pernicious anemia produce specific changes in the fundus. Retrobulbar neuritis can reveal injury of the optic nerve from alcohol or tobacco. The papilla s pale in such cases, as in disseminated sclerosis. In botulism there is often an internal and external ophthalmoplegia, less often paralysis of an eye muscle. Many disturbances of the eye indicate professional disease, as, for instance, glass-blower's cataract.

And yet, with all this, the ophthalmologist is variously regarded. An internist[15] begins an article

"I think there can be no question that the field of ophthalmology is the best tilled and best understood branch of medicine. More than in any other specialty, ophthalmologists have probably most nearly exhausted the field. Ophthalmologists, more fully than any others, have met their problems and solved them so far as their solution is humanly possible with the light that science and art now afford. The ophthalmologist has for years recognized the fact that the eye is just one small part of the great human system; also that, for the most part, any eye disease is simply a local manifestation of some general systemic or focal infection. The relationship of general medicine, as well as the various specialties, has been fully recognized by the ophthalmologist, and the assistance of these various branches is requested day after day to clarify some obscure eye condition."

We all know that the above is a most flattering description, but we must admit that the ophthalmologist[16] seeks the aid of fully equipped laboratories and is alive to the value of their reports on the blood, urine, tuberculin and Wassermann tests as much, I am sure, as the medical profession at large. The popular impression of the laity is that the ophthalmologists is a man who fits glasses; his powers to investigate or to diagnose general pathologic conditions through his special field are given little credence. His consultation work with his medical confrères is rather infinitesimal; in fact, many patients are referred to their family physician for the treatment of conditions which were not discovered until the patient visited his ophthalmologist for eye examination.

Even within the medical profession,[17] the claim that the eye can be studied, treated, and corrected by those ignorant of anatomy, physiology or pathology is often allowed to go unchallenged by physicians who are nevertheless indignant at the effrontery with which the osteopath or chiropractor claims that he can make adjustments of the bones or nerves without any fundamental training in medicine. Some medical practitioners are so uninformed regarding the effects and implications of refractive errors that they refer patients who might have eyestrain to an optometrist, o reven go to him for their own glasses.

In conclusion, let me say, with a noted British writer,[18] "The ophthalmologist must be first and foremost a medical man, familiar with general medical problems and principles."

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THE RELATION OF THE GENERAL PRACTITIONER TO THE SPECIALIST *

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The subject assigned to me today is "The Relation of the General Practitioner to the Specialist." In the modern trend of medicine, wherein at present the specialist is defined as one who knows more and more about less and less, and the medical student as one who knows less and less about more and more, how shall the discomforts of the average patient be relieved?

Early Specialist.—I shall go in a very general way over the history of the development of specialization in medicine—a large subject, the history of which has repeated itself in many countries.

Under different aspects of space and time, says Garrison,[1] all phases of folk medicine have been essentially alike in tendency. Cuneiform, hieroglyphic, runic birchbark, and palm-leaf inscriptions indicate that the folk ways of early medicine were the same. The same problems have been similarly solved, the same natural difficulties similarly attacked by peoples in different parts of the earth, un-

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acquainted with each other. Among the savage tribes medicine was an affair of charms and spells, plant lore and psychotherapy, to stave off the effects of supernatural agencies. Medicine was only one phase of a set of magic or mystic processes designed to promote human wellbeing. It is highly probable that in all primitive societies the priest, the magician, and the medicine man were one and the same, and that the powers ascribed to these ranked with courage and the sword as a means of securing leadership or kingship.[2]

As soon as the savage advanced a little in the knowledge that is gained from experience, it was natural that some special talent for herb doctoring, bone setting, and rude surgery should be developed and employed as a means of livelihood by certain individuals. The midwife, from whom obstetrics takes its origin, is one of the most ancient of professional figures. The eye specialist is the oldest specialist of which there is any record.

In the bronze age in Europe (2000–1000 B.C.) surgical saws and files were plentiful. With the improved metal instruments, external urethrotomy, amputation and lithotomy could be performed. With the development of tools more specialization was necessary. The ancient Hindus, says Garrison,[3] performed every major operation except ligation of the arteries.

Wherever there has been a civilization of a high order, considerable division of medical labors is recorded. Herodotus, the father of history, said of the Egyptians: "The art of medicine is thus divided among them: each physician applies himself to one disease only; some physicians are for the eyes, other for the head, others for the teeth," etc. Their work was considered poor for this reason, that they confined themselves to one disease or to diseases affecting only one part of the body. They were thus too highly specialized. Similarly the physicians of ancient Greece, according to Socrates, were "ignorant of the whole, which ought to be studied also, for the part can never be well unless the whole is well."

In each developing civilization, in ancient Egypt, China, Greece, and in the Mohammedan countries, medicine evolved from the simplest state, in which it was merged with religion and with the ruling powers, to higher differentiation.

Mediæval Period. — In the mediæval period (1066–1438), when learning in Europe was confined almost wholly to the monasteries, the clergy were the physicians and medicine was subject to papal mandate. Barbers became essential and popular servants in the monasteries after 1062, when the monks were forbidden to wear beards and smooth-shaven faces became the fashion. Surgery, a hundred years later, was separated from medicine by the famous edict of the Council of Tours in 1163, "Ecclesia abhorret a sanguine," in which Pope Innocent III forbade the priests to undertake operations involving the shedding of blood, because he considered the practice of surgery derogatory to their dignity. Blood-letting had been a sheet anchor of therapeutics through the ages, and the priests were loath to relinquish a practice so lucrative; wherefore they compromised by teaching surgical procedures to their barbers, who were supposed to work only under clerical direction. By legislative enactment, thus, one branch of medical practice became inferior to another, and the specialty of surgery was divorced from medicine.

A sort of caste system was introduced in Paris in the thirteenth century, in the Confrère of St. Côme. The guild of barber surgeons was subdivided into the clerical barber surgeons, or surgeons of the long robe, and the lay barber surgeons, or surgeons of the short robe, whose practice was supposed to be limited to blood-letting, the healing of wounds, and to more menial tasks. At one time in history a military surgeon was required to shave the officers of the company. In the fourteenth century royal decrees are recorded forbidding the surgeons of the short robe to practice without having been examined by the surgeons of the long robe. The examination consisted in sharpening a knife or in preparing certain salves and plasters.

The invention of gunpowder and the treatment of its wounds, the new feature of Renaissance surgery, gave the barbers their great opportunity and proved the turning point in the development of the art of surgery.

Renaissance.—Ambroise Paré,[4] one of the most fascinating and colorful characters in surgical history, a rustic barber's apprentice, went up from the provinces to Paris in 1529 and became a surgical dresser at the Hôtel Dieu for three years. Eight years later, in the army, he made himself the greatest surgeon of his time by his courage, ability, and common sense. He well represents the highest achievement of the barber surgeon. Snubbed by the surgeons of higher standing, and ridiculed as an upstart because he wrote in his native tongue instead of Latin, he made his way to the front on the field of battle. After his success he was made a member of the Confrère of St. Côme, or long robe, and successively became

surgeon to four kings. Paré, it will be remembered, introduced the ligature of blood-vessels into amputations; was responsible for the abandonment of the use of boiling oil in wounds, and was first to advocate the manual induction of labor in obstetrics.

It was a current saying in his time, "Ubi tres medici, duo athei" (*i.e.*, "Where there are three doctors, there are two atheists"). Paré himself, however, was pious, as he constantly showed in his commentary upon his own treatment of cases, in the words which were later engraved upon his tomb: "I dressed him, and God cured him."

After the Renaissance, the sciences, although restrained by religious authority, made swift progress. The advances in physics and chemistry of the seventeenth and eighteenth centuries, and the development of the experimental method, made possible the tremendous advances in the medical sciences of the nineteenth century, which have favored the overgrowth of specialism in twentieth-century practice.

America.—The subdivision of medical practice which we know as specialization in America today really belongs to the last fifty years of rapid concentration of our urban population, and runs parallel with it.

In the beginning of this century, in the north and west, medical journals were alive with papers on the dangers of specialism. Dire predictions were made as to the welfare of the general practitioner who had found it necessary to send his rectal cases to the proctologist, to refer other cases to the neurologist, genitourinary surgeon, psychiatrist, gynecologist, laryngologist, otologist, until it seemed that the old family physician must himself become a specialist in all these troubles or become a mere directory to the specialists. "But even he has become wise in his day," says a paper[5] of that time, "for he has become the internist."

Specialization in the South.—The south has been slower than the north in the organization of its workers. We have now, however, in the Southern Medical Association, seventeen well-attended sections representing as many special branches of medical practice. The sections are arranged for convenience of study primarily—not to separate specialists and general practitioners—for at last 75 per cent of those attending the meetings are engaged in general practice.

Even now the most general of the general practitioners has some of his laboratory work done for him, and employs the services of a pathologist or radiologist when it is necessary.

Group practice in the south is rather rare and loosely organized at present. Whether it will be more or less closely knit in the future I shall not attempt to say. If it is, business talent, either from within or without the medical profession, will be largely instrumental in bringing it about.

Contract Practice.—At the risk of having many of you differ with me, I wish to say a word about contract practice. This has such a profound influence upon the welfare of the general practitioner that some mention of it must be made. No one will deny that the needy must be served medically, and no one will deny that the pick-and-shovel class of laborer is hardly in a position to weather a protracted illness, from a financial standpoint. Hence, the idea of his employer's providing a physician for him and his family seems a matter of mere justice and humanity. On the other hand, the inclusion of the better remunerated clerical staff and officials of corporations among those entitled to contract services, for a monthly sum often little more than the price of a haircut and not so much as the admission price to the best "movie" shows, tends to pauperize the patient, work a hardship upon the contract physician himself, discourage the neighborhood independent doctor, place a wrong sense of values upon medical service in general by making it appear that ordinary medical charges are exorbitant and unnecessary, and tends to lower the standing of the profession in the eye of the public. It encourages list practice; for, says the layman: "What possible virtue can there be in having monthly medical stipends pass through a company's treasury? Why can not I, a shoe clerk or a grocer, pay directly a trifling sum each month to a list practice concern and secure medical and surgical services for myself and family?" And he certainly has just as much right to do so as the employee of a corporation. Nothing is drawing this country to state medicine faster than uncontrolled contract practice.

Boundaries of Specialization.—To leave this phase of medical ethics and economics, we should like to know which of the chance and arbitrary divisions of the healing art will survive; which specialties are justified and capable of adaptation to their surroundings; and which will become extinct by natural selection, like the dinosaur and diplodocus of old? For example, will gynecology be absorbed by obstetrics, by general surgery, or by neither? Will gastroenterology and neurology become parts of internal medical practice?

Just how is medical practice subdivided now? We have in Birmingham, an average southern city of 260,000 population, a large number of general practitioners—the bulk of the profession. We have men who limit their work exclusively to a specialty; for example, to skin diseases or orthopedic surgery; we have men who refuse certain types of cases, such as obstetrics; men who call themselves "general practitioners," but who practice chiefly, perhaps, on a special class of cases.

Many of the contributions to medical progress have been made by specialists; and *specialist* is a term to which a few outstanding men in this century have given prestige. It is a term which has considerable appeal to the laity, despite the fact that the average patient who likes his specialist wants him for a family doctor as well.

I have a friend in New York City, a highly intellectual woman, who tells me, with some pride, of her physician there—a man apparently with a large practice. She knows he is a good doctor, she says, because he is a specialist. This specialist has taken care of her through two pregnancies and delivered her of her babies, attended to the babies, and prescribed for them throughout their infancy and childhood; removed adenoids and tonsils from the children and their parents, and treated the youngsters meanwhile for contagious diseases of childhood and the whole family for influenzal attacks. He has also operated upon the husband for hernia and the wife for gallstones. His specialty I have never accurately learned, but he keeps the family content and in good health. The work sometimes allotted to half a dozen men is thus very successfully performed by one. But the physician should be perfectly honest in his account of himself to the patient. In this case, however, he has misused the term *specialist* for psycho-therapeutic purposes.

This being the machine age, medicine is being subdivided by instruments as well as by diseases. The inventors are thus outlining some of the specialties for us. We have to spend so much time in becoming skillful in the use of an instrument or method (for example, the bronchoscope or cystoscope) that, for the sake of economy and efficiency thereafter, we must continue to use it as much as possible. The most obvious example of an instrument which has made a popular specialty is the x-ray. The man with an expensive x-ray equipment needs to keep it running all the time to reduce his overhead. He has little time for other work. He is a specialist in a very particular kind of diagnostic work, and in the treatment of a few diseases.

Specialties logically should be allocated according to the etiology of disease, but our ideas of etiology are constantly shifting. Advances in the sciences serve merely to emphasize the possibilities of remote causation of symptoms, and the uselessness of treating only the diseased part, such as is sometimes done in specialties.

Endocrinology and Specialists.—Endocrinology, which is just beginning to emerge from the land of fable, will give us, in a few years, fundamental or systemic methods of treatment of a number of local conditions. The causes of many local manifestations may be shown to lie in endocrine disorders, which can not be diagnosed or treated by attention to any one part of the body. There has been evolved a technique of discovery in the endocrine field which should considerably stimulate the therapeutics of the future, and this field logically belongs to the province of the general practitioner.

Suppose that a gastroenterologist, a röntgenologist, an internist, a general practitioner, or surgeon, has a gastrointestinal series of x-ray pictures taken of his patient and finds that the stomach is hypermotile. Dogmatically, he thinks of the possibility of ulcer or appendicitis, perhaps cancer, and of medical treatment by diet or of surgical treatment by excision or by gastroenterostomy. But there may be a more general origin of the local manifestation of hypermotility. Quigley[6] and co-workers have shown that injections of insulin increase the contractions of the human stomach. Hyperinsulinism, due to a tumor of the pancreas, conceivably could cause excess secretion of insulin into the blood, with resulting gastric hypermotility. In hyper- and hypothyroidism, gastric motility is altered. There is a hyperglycemia in vitamin B deficiency which is accompanied by gastric atony and decrease of the normal hunger contractions.[7]

If the diagnosis of ulcer is proven, causation of the ulcer is still wholly obscure. Almost any neurologist can offer case reports in which ulcer or perforation of an ulcer seems to have been precipitated by an emotional state such as anxiety or fear. Focal infection has been ascribed as the cause of nearly every type of pathological condition.

It has been demonstrated that the frequency of peptic and duodenal ulcer is very high in cats and dogs following total extirpation of the suprarenal glands.[8] Certain abnormalities of the intestinal mucosa are perhaps occasioned by failure of the

suprarenals. Resection of the ulcer or other local measures may be, therefore, merely treatment of a symptom, when a more general endocrinopathy should be studied.

We know that the healing of a fracture is influenced by conditions remote from the site of injury—syphilis or other infections, low serum calcium or phosphorus, lack of vitamin D, probably parathyroid dysfunction—conditions not always close to the thoughts of the man highly skilled in bone operations. Similarly, urinary calculus, one of the most ancient of diseases, or calcium and phosphatic deposits elsewhere in the tissues, should be related to the dietary intake of vitamins A and D, and to the parathyroid glands. Dental caries is shown to be in a large measure preventable. Thus the trend of medical investigation continually indicates the inadequacy the palliative nature, of a large number of local measures of treatment.

Endocrines in Gynecology.—Gynecology was one of the earliest of the surgical specialties to develop in this country; because gynecological conditions, such as fibroids and ovarian cysts, have always been frequent and fairly readily discernible; and because, too, women have always been more patient under treatment than men. Techniques for removal of diseased parts of women developed early, probably faster, says Deaver,[9] because fifty years ago medical gynecology was a failure.

In the last few years knowledge of female anatomy and sex physiology has increased, perhaps more than any other branch of physiology, through isolation of the sex hormones. Internal secretions which initiate and carry on many female functions have been purified in a highly active state. Ovarian extracts are coming out of the realm of medical fable into the realm of exact science.

Suppose that a non-pregnant patient presents herself, complaining of prolonged uterine bleeding. In medical school eighteen years ago we were taught to think of the mechanical causes of the condition: uterine polypi, fibroids, or general infections such as syphilis or malaria, perhaps of malnutrition.

The cessation of reproductive functions, changes in secondary sex characteristics, and other more general effects of castration of either sex have long been matters of common knowledge. The cyclic formation of the ovarian follicle, its rupture liberating ova, and the subsequent formation of the corpus luteum or yellow body at the site of the follicle, have also been well known. The corpus luteum disappears again before the appearance of the new follicle, or it may continue, inhibiting ovulation, throughout pregnancy. If the ovary is removed or the corpus luteum ruptured in pregnancy, resorption of the fœtus follows. In obstetrics, gynecology, and internal medicine, ovarian extracts and extracts of the corpus luteum have been used for dysmenorrhea, nausea of pregnancy, nervousness of the menopause, and other conditions, just as physicians years before the discovery of insulin prescribed pancreas and pancreatic products for diabetes; but when the effects seemed to be good, it is probable that "the remedy amused the patient while Nature cured the disease."

In the past five years, however, Allen[11] and Doisy,[10] Zondek and Ascheim, Frank,[11] and other observers have isolated and concentrated to a very high potency, in crystalline form, a substance, a principle of femaleness of many animals, which induces rutting and mating of spayed rodents and other species. The tissue changes of the mating period follow its injection. The accounts of its effects make one think of the possibility of a modern substitute for the love potions in the old stories of Titania and Bottom, Tristan and Isolde.

Still more recently, Allen and Corner[13] and others have reported an extract of the corpus luteum which enables a pregnant ovariectomized animal to carry her fœtuses through to term. Both ovarian substances are apparently necessary in the menstrual cycle of primates. They are undoubtedly concerned in the normal menses, and in miscarriage and sterility of women. They are local endocrine factors concerned in metrorrhagia.

The effects of the anterior lobe of the pituitary in stimulating growth and sexual maturation of young animals was shown by Evans and Long. Recent studies of Smith[15] and Engle[16] upon the pituitary make it a sort of king or ruler of glands, responsible for function in many others. Its anterior lobe controls skeletal growth. The adult animal, male or female, loses all sexual power immediately after hypophysectomy. The immature animal fails to develop. By pituitary treatment, enlargement of the genital tract is induced, with estrus, ovulation, and reproduction in very young animals. The pituitary contains an ovary-stimulating hormone. In amphibians which mate in the spring and in which egg-laying normally stops in winter, mating and ovulation have been induced by Adams[16] in the fall and winter, following pituitary transplants.

Smith[14] has made very full anatomical studies of the tissues of the albino rat after hypophysectomy.

The adult animal lives on, perhaps half his normal life span, with symptoms of senility rapidly advancing. At autopsy shortly after hypophysectomy, it is noted that the thyroid, suprarenals and genital organs have atrophied and degenerated. The testicles are flabby and lie inside the abdomen. The kidneys and spleen are smaller.

Functional restoration of all these tissues follows treatment with pituitary gland. When it is supplied, testicles, ovaries, and other glands function normally and reproduction is again possible. It has been suggested by Engle[16] that rejuvenation operations upon old men might be more successful if pituitary injections were given at the same time. The possibility that aging may be retarded by active pituitary extracts again intrigues our fancy.

There are many endocrine factors, then, in metrorrhagia which are coming to light. Dysfunction of the hormone of the Graafian follicle or of the hormone of the corpus luteum may be responsible; or the anterior pituitary, as a general stimulator and regulator of gonadal function, may be at fault. And one has little idea what induces the pituitary at puberty to stimulate the gonads to function. Is it the parathyroids, suprarenals, light, or food? Vitamin deficiency and endocrinopathies are apparently closely related.

The present knowledge of the endocrines, which is still very small, reëmphasizes the need of study of the whole patient before treating any of his symptoms. How difficult it is, then, for these wholly interdependent parts of the body to be apportioned among physicians! The physician of the future should consider each local symptom as a possible manifestation of a systemic disorder, no matter how highly specialized his field may be. Although it is said that a good general practitioner can take care of eighty to ninety per cent of all human illnesses, the average student who is graduating now from what are considered our best medical schools wishes to practice a specialty.

Conclusions.—In the future, highly technical instruments will continue to encourage new specialties, and the specialist as an expert technician will be required.

The general practitioner will perhaps eventually limit his practice to diagnostc work, to the handling of fairly normal labor cases, to preventive work such as periodic health examinations, to the treating of average clinical conditions, and to the emergencies of practice.

"Life," says Bordet, "is the maintenance of an equilibrium which is incessantly menaced." An equilibrium must be maintained between the specialist and the general practitioner, to prevent myopia in the one and presbyopia in the other.

The best practitioner will recall that he can not remain intellectually where his medical college education left him. Like the business man who said that on the first of every year he went to his safety deposit box in the bank and tore up half his assets, every few years the physician must go through the vault of his memory and throw out a large part of his therapeutics, which will have become worthless.

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SURGERY IN DIABETES MELLITUS*

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There is no surgical disease to which the diabetic is immune, and it follows that the medical practitioner must be prepared to coöperate with any branch or specialty of surgery. Nothing better illustrates the need for two types of special skill and for nice interplay between medical and surgical care.

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Most of us will see this subject against the background of the surgical risk as it was before the days of insulin. When the supply of insulin was small and the demand great, who did not see a diabetic die for lack of it while he read of the fortunate few who had it, and neither the physician nor the surgeon need be ashamed if the strain of a psalm crept into his scientific report of its use.

This paper, of necessity, can not consider surgical problems as such, since the writer is not a surgeon; neither can the management of diabetes be taken up in detail. Rather shall we attempt to map out the guiding principles when the diabetic subject develops a surgical condition.

There is no statistical value in the figures, but perhaps a somewhat surprising variety appears in the table relative to the last 250 diabetic patients admitted (Table I). It is seen that, of this number, 44, or 17.6%, had surgical complications exclusive of dental conditions. A classification of the surgical complications includes 23 heads. Thirty-seven patients were operated on, of whom six died; seven were not operated on, and in this group one died.

TABLE I

Diabetics	250		
Surgical Complications	44 (17.6%)		
	Cases	*Operated Upon*	*Died*
1. Maxillary Sinusitis	1	1	
2. Cataract	1	—	
3. Chronically Infected Tonsils	4	4	
4. (Dental Infection)	—		
5. Carbuncle of Neck	2	4	2
6. Fracture Humerus	1	—	
7. Sarcoma Index Finger	1	1	
8. Hyperthyroidism	5	3	1*
9. Cholecystitis	5	3	
10. Carcinoma Pancreas	1	1	1
11. Carcinoma Lower Ileum	1	1	
12. Acute Appendicitis	5	5	
13. Inguinal Hernia	1	1	
14. Fistula in Ano	1	1	
15. Fibrous Obstruction Neck Bladder	1	1	
16 Salpingo-ovaritis	2	2	
17. Chronic Endometritis	1	1	
18. Fibroid Uterus	1	1	
19 Chronic Osteomyelitis Femur	1	1	1
20. Leg Trauma from Mule Kick	1	—	1†
21 Spastic Flat Foot	1	1	
22 Abscess Foot	1	1	
23. Gangrene Foot	6	6	
	44	37	6

* Toxic Adenoma.

† Sepsis and Acute Nephritis.

In a general way, the diabetic management of these surgical subjects is similar in all; but I should like to direct attention, along lines as practical as possible, to four special topics:

1. Surgical conditions predisposed to by diabetes.
2. Diagnostic difficulties introduced by the leukocytosis of acidosis.
3. Surgical conditions predisposing to diabetes.
4. Pre-operative and post-operative diabetic management.

1. The more important of the surgical conditions predisposed to by diabetes are cataract, carbuncle, dental infection, and gangrene of the lower extremity.

The senile cataract and the lens rendered opaque as the result of diabetes is such a highly specialized subject that I shall say no more about it. With regard to carbuncle, I feel almost as helpless, once it has developed, as before we had insulin. It is easy to preach domestic cleanliness as important in the care of the skin, but I doubt whether the two subjects are closely related. This skin infection seems to be much more fortuitous in its origin. The most recent case of carbuncle I have seen was that of a gentleman whose personal toilet was notoriously meticulous, but he died of a carbuncle in spite of dissipation in soap and water. For that matter, he had been faithful also to the diabetic regimen prescribed. The prevention of carbuncle in the diabetic lies in the control of the blood sugar.

FIG. 1.—Diabetic Peridontoclasia

With regard to dental complications, the work of my associate, Dr. John Bell Williams, has furnished definite and valuable ideas. He finds[1] that patients who have well-developed diabetes, but have had no adequate treatment, are apt to have teeth that are loose, gums hypertrophied, inflamed, dark red, ulcerated, and covered in spots with grayish areas of necrotic tissue. The condition may resemble pyorrhea, Vincent's infection, mercurial poisoning, or cancer; but it is really a dental clinical entity which Dr. Williams calls "diabetic peridontoclasia" (Fig. 1). In contrast, though diabetes may have been of long standing, yet, if under control, the teeth are firm, the mucous membranes, while soft, flabby

and spongy, present no areas of ulceration, and the gums as a rule have not receded. There may be, however, extensive loss of alveolar bone, with deep pockets but little or no pus formation. Two conclusions are to be drawn: (1) Adequate diabetic treatment may alter the picture; (2) any necessary dental operations may be safely undertaken and should not be neglected when a diabetic balance has been maintained for a reasonable length of time.

Since insulin came into use the death of the diabetic is more often attributed to arterial disease than to acidosis. The degenerative processes of advancing years can not be altogether avoided, but their premature onset and speedier progress tend to be prevented and checked by control of hyperglycemia.

Under the teaching of painstaking and conscientious leaders typified by Joslin, the care of the skin is written plainly in the diabetic decalogue. If one has a distaste for the surgery of pioneer days, let him not neglect the foot of the diabetic patient. This part of the body, subjected to trauma by its place and function, its blood supply limited by a long and forked line of communication, is subjected to all the hazards of the arterial system, plus some extras.

Infection may arise in any foot or in any tissue, young or old; but, clinically, the diabetic sore, perforating ulcer, and gangrene of the extremity are complications besetting the diabetic of somewhat advanced age rather than the youthful subject. This means that, whatever rôle hyperglycemia may have played in the sclerosis of the arteries, none the less there is arteriosclerosis. This fact limits the possibilities of treatment after gangrene has developed and emphasizes the importance of scrupulous care of both skin and arteries in all diabetics. Insulin may be of value in preparing the victim of gangrene for surgery, but it can not be expected to restore the nutrition of a part once deprived of its blood supply. More and more attention is given to the arteries of even the youngest diabetics, as observed especially in the eyegrounds and röntgen-ray studies of the leg arteries, looking forward to a reduction in mortality from this now common cause of death.

For protection of the arteries, in addition to maintenance of a blood sugar approximately normal and hygiene of the feet, attention to foci of infection may be demanded. The ideas advanced by Hepburn and Graham[2] may not be entirely proved, but they bear out my own, including the relation of such foci to angina pectoris,[3] in a way that tempts me to quote them:

"If one considers the vascular changes leading to death in diabetes, it is found that they are chiefly, if not wholly, confined to the intimal coat of the vessel, whether it be in the arteries of the heart, brain, kidney, or lower extremity.[4] Further, the early intimal changes are inflammatory in type, degenerative changes being secondary and appearing later. It is generally believed that no single factor is responsible for these changes in the intima. Yet there is general agreement that infection is the most important single cause.[4,5] The improvement in the symptoms of patients with cardiovascular disease following the removal of foci of infection, so striking in some with angina pectoris, is a clinical indication of the causal relationship of infection to disease of the coronary arteries, and suggests that the condition of the vessel improves after the removal of infection. May this not occur in diabetes mellitus? The susceptibility of diabetic patients to infection and the detrimental effects of infection on the clinical course of diabetes mellitus, particularly in untreated diabetics, are only too well known. Is it not probable that in diabetes mellitus the premature development of vascular changes is the result of infection acting in the presence of the abnormal metabolism of diabetes mellitus? If this be the case, one's efforts ought to be directed to prevention and eradication of infection as well as to restoration of a normal metabolism."

An infected foot or a necrotic extremity may render the patient refractory to insulin. If the time of election for operation has plainly come and the risk of acidosis does not seem great, it not infrequently becomes the best course to rid the patient of his dead part regardless of the blood sugar level, in the belief that afterwards insulin will do its work.

2. The second topic for discussion is the matter of the leukocyte count. Until a few years back no one had suggested that acidosis could cause leukocytosis. Now this fact seems well established. As a result, there is a chance for imperfect reasoning that may prove disastrous. The logic may appear to be: acidosis is obvious; it causes leukocytosis; the patient has an increased leukocyte count due to acidosis. Further, it may be argued acidosis causes abdominal pain, nausea, and vomiting; therefore, these symptoms and leukocytosis are all attributable to acidosis. Such reasoning is often sound and may avoid a needless operation done at a peculiarly inopportune time; but there is another line of reasoning that introduces a different first cause and leads to very different conclusions. It recognizes that acidosis itself

is often precipitated by infections arising intercurrently in diabetics, and that the whole train of symptoms, including leukocytosis, may be due to an inflammatory lesion, possibly intraäbdominal, more especially acute appendicitis, and in that event the surgical indications are just as imperative as they are in a non-diabetic. Three times in our experience this has been the only conclusion that seemed to accord with the bedside observations, and, in each, operation revealed acute appendicitis, in two cases suppurative. Such a riddle allows of no dogmatic or universal solution. For the present I am inclined to believe that the guiding principle may well be that, in diabetic acidosis, localized abdominal tenderness and rigidity should be accorded their classical surgical significance.[6,7]

3. There are fairly definite grounds for expecting that chronic cholecystitis and pancreatitis would predispose to diabetes. This is to assume that inflammatory lesions of the digestive secretory glands of the pancreas involve also the islands of Langerhans and their internal secretory function. In actual experience this assumption does not seem to be borne out. Indeed, it appears that the discovery of insulin arose out of a hypothesis more or less directly opposite. Quoting Funk[8]:

"October 30, 1920, is an interesting date in the history of diabetes. It was on this day that F. G. Banting conceived the original idea which led to the discovery of the therapeutic value of insulin. Banting had read the article by Moses Baron which appeared in *Surgery, Gynecology and Obstetrics*, and in which the author pointed out the analogy between the degenerative changes which follow the experimental ligation of the pancreatic duct and the blockage of the duct by gallstones. Later in the night, under the influence of ideas evoked by this article, Banting made the following entry in his notebook: 'Ligate pancreatic duct of dogs. Wait six to eight weeks for degeneration. Remove the residue and extract.' "

If the diabetic patient obviously suffers from cholecystitis and on that account needs surgical relief, it is usually feasible to give it, and it should be rendered. Thereby it is possible some benefit to the diabetic process may be derived. I question, however, whether operation should be done on the theory that gallbladder drainage will improve the carbohydrate tolerance in a patient with cholecystitis, even though chronic pancreatitis also is suspected.

There is, however, one condition amenable to surgery which at times appears to have a very definite causative relation to diabetes. For many years it has been known that increased thyroid activity decreases carbohydrate tolerance, and *vice versa*. More than twenty years ago Von Noorden wrote that it is almost impossible to set up a glycosuria in the subject of myxedema. In the students' clinic at the old University College of Medicine, Dr. Stuart McGuire once told his class that the patient he was about to do thyroidectomy on had sugar in the urine. I recall that he stated that the sugar might disappear after operation, and that a little later he reported that such was the case. Now the subject is somewhat better worked out.

In May, 1929, a woman, aged 31, was admitted to St. Luke's Hospital with classical symptoms of exophthalmic goiter, a typical diabetic blood sugar curve, and glycosuria. Under Lugol's solution the basal metabolic rate was brought down from plus 95 to plus 29. Coincidentally, on a diet high in calories but restricted in carbohydrates, with approximately 20 units of insulin daily, a satisfactory diabetic balance was obtained. Partial thyroidectomy under local anesthesia was done by Dr. McGuire. There was no glycosuria after the fifth day, no insulin was required after the tenth day, and on the fourteenth day the blood sugar was 160 two hours after breakfast on a diet containing 125 grams of carbohydrate. The basal metabolic rate at this time was zero. There has been no recurrence of diabetic symptoms during the year that has elapsed.

While it can not be assumed in the above case that the carbohydrate tolerance is normal, it illustrates the fact that definite improvement in tolerance usually follows under the circumstances described.

Wilder[9] is inclined to refer the influence of the abnormal thyroid gland on carbohydrate tolerance to its influence on the general metabolic rate without recourse to a specific relationship between thyroid and pancreas. But, as Wilder himself points out, the theory which he favors breaks down in view of the fact of an increased carbohydrate tolerance with the increased metabolic rate of exercise. The exact relation between the two internal secretions is important, but our present interest is in the clinical rather than in the explanatory phases of the subject.

4. What has been said serves to emphasize the truth that, both in surgery and in the management of diabetes, it is necessary to individualize each patient; but there remain certain simple and broad principles fundamental to the whole subject. The first is that, except for a certain handicap put upon insulin by infections, and sometimes the urgency of

the surgical needs, the diabetic patient can be brought to a state about as fit for surgery as the non-diabetic.

For purposes of getting an operation done, the attention of the medical attendant should be focused on acidosis, for it is this and not diabetes that kills directly. Given a normal digestive system, the best guaranty against acidosis is a normal blood sugar. To obtain a normal blood sugar, carbohydrate intake and insulin are adapted to the carbohydrate tolerance. At the same time, with special reference to acidosis, the fat intake is strictly controlled. An ample fluid content of the diet is seen to.

This is all standard, orthodox, and clear; but it does not go far enough. It does not allow for faulty combustion of the patient's fat—endogenous metabolism. Everything may have appeared, on the face of things, to be ideal; but post-operative nausea and vomiting may intervene, not only to limit intake of food but also to exhaust the dextrose of the blood and the glycogen stores of the liver and tissues. Under these circumstances metabolic demands are made on the body fats. The condition being highly unfavorable to the complete combustion of body fats, ketosis results. Such a train of events is to be avoided by a relative indifference to blood sugar and sugar in the urine. For the time being, these are rather immaterial. They can be controlled later without undue risk of trouble with the wound. The immediate and paramount indication is to insure that combustion of glucose goes on in the tissues whether or not there is an excess to be excreted in the urine or a blood content higher than normal. It is like winning the war, when waste is not counted. This principle and adequate fluid supply are the physician's counterpart to the surgeon's regard for asepsis in surgery of the diabetic.

The "weighed diet" need not be a solid diet. It can be prescribed as a liquid or soft diet, and the competent dieticians, now usually to be found where competent surgery is done, can provide the diet even though the patient is taking liquids only. If the oral administration of food is impossible or is contraindicated, glucose and water may be given by rectum, hypodermoclysis or intravenously. Through the various post-operative stages, the desired proportions of carbohydrate, protein and fat can be prescribed in whatever form of liquids or solids surgical judgment may dictate in view of the post-operative condition. When normal digestive conditions are reëstablished, the physician may shift his regard from the treachery of acidosis to the more permanent and basic control of its forerunner, diabetes.

During the latter days of the hospital stay, if the patient has not already been educated in his own diabetic management, this is the opportunity. In this case ignorance is not bliss. Too many diabetics still suffer unnecessary morbidity and death. It is no royal road the diabetic travels through surgery to learning; but if he must travel it, let him learn.

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THE DIAGNOSIS AND TREATMENT OF THYROGENIC HEART DISEASE *

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It has been generally assumed that the treatment of all forms of heart disease falls naturally into the province of the specialist in internal medicine or cardiology. It would appear to be a paradoxical presumption, therefore, to state that there is one form of heart disease which is amenable to successful surgical treatment. One purpose of this paper is to direct attention to the fact that there are many cases of thyrogenic heart disease in which the cardiac manifestations appear to overshadow the signs and symptoms of the underlying hyperthyroidism. This is particularly true in those cases in which the patient has presented himself to a physician for diagnosis only after the early signs of cardiac decompensation have appeared. In such cases, the necessity for the accurate recognition of the etiologic background of the heart disease is of paramount importance because proper surgical intervention will result in marked improvement or cure in the great majority of cases.

While the frequent coincidence of heart disease and goiter was described by Parry and Flajani a half-century before Graves and Basedow described

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the disease which bears their names, it is only during the past two decades since thyroidectomy has become a common and safe procedure that we have arrived at a new understanding of the cardiac disorders associated with hyperthyroidism. We are indebted to Lahey, Levine and Hamburger for calling attention to the common failure of physicians to recognize what Levine has aptly termed "hyperthyroidism masked as heart disease." The importance of recognizing the true nature of such cases is duly emphasized by Levine's statement that "there is no other type of heart disease from which a patient may so satisfactorily recover after reaching the extreme state of cardiac failure, when it is obvious that the heart failure is the result of an underlying hyperthyroidism."

It is not an uncommon experience for the surgeon who has interested himself particularly in the study of diseases of the thyroid gland and their associated disorders to discover that a patient with hyperthyroidism has been treated for many months for congestive heart failure or for auricular fibrillation or flutter, before the possibility of hyperthyroidism as an underlying cause was considered.

A statistical study of our records reveals that in about one-half of the cases of thyrogenic heart disease which we have encountered the patients did not present the ordinary clinical picture of hyperthyroidism. It is, therefore, necessary to recognize that there is this common form of thyrogenic heart disease in which the clinical picture is dominated by the cardiac manifestations of the disease. In view of this fact, it might be profitable to direct attention to certain criteria which have been of value to us in identifying these more obscure cases.

It is now generally recognized that Graves' disease often exists without exophthalmos or superficial enlargement of the thyroid gland. In cases in which these two diagnostic features of the so-called clinical triad of Graves' disease are absent, emphasis should be placed on such characteristic signs as the hyperactivity of the heart with its characteristic bounding pulse, associated with tremor, loss of weight despite an increase in the consumption of food, elevation of blood-pressure, hyperidrosis, muscular weakness, unusually moist and warm skin, dermatographia, abnormal cutaneous pigmentation, increased peristalsis with diarrhea, a feeling of uneasiness, anxiety and haste and psychical instability. To these may be added such important lesser evidences of hyperthyroidism as quickness of perception and reaction, the rapid flow of thoughts and ideas, the rapidity of speech, and an appearance of exaggerated alertness. Such symptoms and signs are occasionally associated with lowered tolerance for carbohydrates, resulting in transient or persistent glycosuria.

In addition to the development of tachycardia, disturbances of the cardiac rhythm frequently occur. This usually takes the form of auricular fibrillation or, in rare cases, auricular flutter. It is probably true that paroxysms of auricular fibrillation occur more frequently in hyperthyroidism than from any other cause. Therefore, in all patients who experience transient periods of auricular fibrillation or flutter alternating with periods of rapid regular rhythm, the possibility of underlying hyperthyroidism should be a first consideration. This is particularly true if the auricular fibrillation develops in persons past middle life. In all cases in which auricular fibrillation exists without clinical evidence of mitral stenosis, a further search should be made for evidences of hyperthyroidism.

A therapeutic test with digitalis may yield important informtaion. Levine and others have emphasized that, in cases of thyrogenic auricular fibrillation, the ventricular rate is rarely, if ever, reduced to the same extent that occurs when patients with auricular fibrillation of rheumatic etiology are subjected to adequate digitalization. In other words, digitalis is relatively ineffective in restoring normal rate and rhythm in the auricular fibrillation of hyperthyroidism. In cases of thyrogenic auricular fibrillation, however, the institution of lugolization will usually induce a remarkably favorable change in the cardiac rate and rhythm.

It is generally agreed that the most important single laboratory aid in arriving at a diagnosis of hyperthyroidism is the basal metabolism test. It is true that patients with cardiac decompensation usually exhibit a slight elevation in the basal metabolic rate, but the elevation due to cardiac decompensation alone rarely exceeds twenty per cent. If repeated basal metabolism determinations reveal a rate constantly above thirty per cent, it provides further confirmatory evidence in favor of a diagnosis of hyperthyroidism.

If a diagnosis of thyrogenic heart disease has been established, the next important procedure is the proper pre-operative preparation of the patient. The procedure differs from that employed in simple hyperthyroidism without evidence of cardiac damage in that attention must be directed to both the heart and the thyroid gland. As regards the injury to the

heart, it is important to emphasize that the changes produced by hyperthyroidism in the cardiac muscle are essentially functional and not structural. There is no evidence that thyrotoxicosis alone produces any permanent structural damage to the myocardium.

As in all cases of cardiac inadequacy, the most important single therapeutic measure is complete rest in bed, preferably under constant supervision in a hospital. Primary lugolization is instituted immediately upon admission to the hospital. Ten drops of Lugol's solution are given three times daily for two weeks. At the time of admission a basal metabolism determination and an electrocardiogram are made. During the period of lugolization three or four basal metabolism determinations are made, and, if deemed advisable, additional electrocardiograms. The response of most patients who have experienced marked sinus tachycardia or auricular fibrillation or cardiac decompensation to the lugolization is ordinarily quite striking. In most instances sufficient improvement will have occurred at the end of this two weeks' period to justify subtotal thyroidectomy. In occasional severe cases, it will be necessary to continue the bed rest for one or two months, during which time it is often desirable to keep the patient quiet by the judicious use of sedatives of the barbital group. If it develops that the patient must be kept at rest for a month or more, the administration of Lugol's solution is discontinued after the first two weeks. Secondary lugolization should be commenced in such cases about ten days before the indicated time for thyroidectomy. If it has been found necessary to keep the patient bedfast for many weeks prior to operation, it is desirable to accustom the patient gradually to a sitting posture a few days before the operation is contemplated.

It would seem unwise to specify any type of anesthetic, since most operators are guided by their own experience. We have found that nitrous oxide and oxygen anesthesia gives excellent results in those cases in which there is no mechanical pressure on the trachea. If there is radiographic or clinical evidence of tracheal pressure, we have found it desirable to employ local anesthesia.

We have adopted the practice of doing the radical subtotal thyroidectomy in all cases. Experience derived from over 4,000 thyroidectomies has taught us that it is not the amount of thyroid tissue which is removed, but the amount that is left behind that is most likely to produce subsequent difficulties. In most cases we have found it desirable to leave the incision open, to be closed at a later date, the time of closure depending upon the post-operative course. The average time for the approximation of the skin edges is four days after the operation. By this means adequate drainage is established; any source of post-operative hemorrhage can be easily controlled and the likelihood of the development of pressure symptoms due to post-operative edema is eliminated. We have observed no essential difference in the amount of scar tissue in those cases in which primary closure was carried out and in those in which the closure was delayed for several days.

The most important requirement in the post-operative care is the constant presence of a skillful nurse. The patient should be kept quiet for several days, preferably with morphine or pantopon. The dressings should be changed two or three times daily during the first two or three days after the operation because of the accumulation of secretion from the open wound. The patient should receive an abundance of fluid. If the post-operative course is uneventful, the patient is usually kept in bed for five days following the operation and is usually permitted to leave the hospital at the end of one week.

During the first week following the operation, the patient is given ten minims of Lugol's solution three times daily. After the patient with Graves' disease returns to his home, five minims of Lugol's solution are given daily for the next three months.

In rare instances the cardiac rhythm may remain irregular following the operation. In such cases one month is allowed for the establishment of normal rhythm. If this does not occur, digitalization is instituted. We have found it a desirable practice to reëxamine the patient and obtain a basal metabolism determination and an electrocardiogram one month and six months following thyroidectomy.

A CORRELATION OF THE CLINICAL AND PATHOLOGICAL CONCEPTS OF HYPERTHYROIDISM *

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The purpose of this paper is to attempt to correlate some of the clinical and pathological concepts of hyperthyroidism. The discussion will be confined to two aspects of the problem. The first is concerned with the newer conceptions of the surgical pathology of Graves' disease, with especial reference to the

* From the Diagnostic Laboratories of the Miami Valley Hospital Dayton, Ohio.

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prognostic significance that may be attached to these more recent studies. Secondly, I will comment on the underlying constitutional factors in cases of hyperthyroidism.

During the past eight years the surgeon and the pathologist have been required to revise all of the previously existing and well-established criteria pertaining to Graves' disease. In 1922, Henry S. Plummer reintroduced lugolization as a pre-operative and post-operative measure in the treatment of Graves' disease. Prior to that time, the gross and microscopic pathology of Graves' disease was remarkably constant. Since that time we have witnessed the most bizarre and extraordinary changes in the gross and microscopic structure of the thyroid gland that has been subjected to lugolization. The structural changes which were previously very constant are now known to be extremely inconstant.

It has devolved upon the pathologist, therefore, to attempt to assist the clinician in an interpretation of these extraordinary new changes in the thyroid gland. A great opportunity has come to him because of the remarkable increase in the amount of surgical material that has poured into the pathological laboratories since the advent of lugolization and the relative safety associated with thyroidectomy nowadays.

At the operating table, the surgeon observes, instead of the old picture of an opaque, firm, grayish-white, friable, extremely vascular, pancreas-like or meaty thyroid gland, a new type of gland of increased size, of firmer consistence, with a peculiar amber-reddish translucence. The capsule is tense, the periphery is lobulated, and on section one is impressed by the decrease in vascularity and by the presence of an abundance of a thin, watery fluid which pours from the freshly cut surface of the gland; this fluid is the newly formed thin colloid which has been called out as a result of the lugolization.

Microscopically, the changes are even more striking. The "old-fashioned" Graves' disease, so-called, such as we saw a decade ago, presented a remarkably constant picture. One observed small acini lined by very tall epithelial cells resting upon an irregular, wavy, undulating basement membrane with many papillary ingrowths; the colloid content of the acini was scant or absent. In other words, it was the converse of the picture of simple colloid goiter. In simple colloid goiter, the epithelial cells are flat; in Graves' disease, they are tall. In simple colloid goiter, the acini are large; in Graves' disease, they are small. In simple colloid goiter, the colloid is excessive in amount; in the old-fashioned type of Graves' disease it is scant, or in some cases entirely absent.

Following lugolization, the picture has changed remarkably. The epithelial cells become cuboidal instead of columnar; ultimately, most of them become flat or pavement in type. The basement membrane becomes smooth instead of irregular and undulating. There is an increase in the amount of colloid which is invariably of a thin, watery, granular consistence. In some acini the amount of colloid which is produced will be excessive and will produce pseudo-adenomas, by no means true adenomas, which are perhaps best termed "involuntary bodies." Some have confused these with true adenomas and several papers have been published on the belief that these involutionary bodies represent stages in the development of true adenomas. They are not. In other words, as Lugol's solution is given judiciously to the patient with Graves' disease, the microscopic picture approaches that of a simple colloid goiter, but the involution is never complete. The telltale localized areas of epithelial hyperplasia associated with areas of lymphoid hyperplasia, the significance of which I will discuss later, are inevitably present as evidence of the fact that one is dealing with Graves' disease which has resolved towards the colloid goiter type following lugolization.

As the involution proceeds, there is a progressive inverse relationship between the amount of the colloid elaboration and the height of the epithelial cells. We know now, as the result of chemical studies, that the amount of colloid production is directly paralleled by the iodin storage in the gland. The pathological picture of old-fashioned Graves' disease is almost extinct. We see some trace of iodinization in the tissue from practically every case of Graves' disease. We have observed that the most complete involution or resolution occurs in those cases in which Lugol's solution has been employed only as a pre-operative measure for a short time. The most successful involution occurs when ten to fifteen minims of Lugol's solution are given three times daily for ten days and not to exceed two weeks, always controlled by repeated basal metabolism determinations and records of the heart rate and rhythm. If the patient has been indiscriminately lugolized over a longer period, the involution is never so complete.

We have also learned that the most favorable involutionary response occurs when the disease has

been of short duration, the diagnosis has been established early, and lugolization has been instituted only as a pre-operative measure.

In view of the fact, then, that the involutional changes are directly proportional to the extent of previous iodinization, it has appeared to us to be possible to determine the extent to which iodin has been employed and to predict the character of the convalescence; in other words, we believe that it is possible to attribute prognostic significance to the histopathological studies in cases of Graves' disease. If Lugol's solution has been discreetly employed over a short period as a pre-operative measure, the involution is almost invariably quite complete. The convalescence in such cases is usually rapid and uneventful, and the likelihood of recurrence or persistence of symptoms is remote. However, if lugolization has been employed indiscriminately, one will find large areas of persistent epithelial hypertrophy and hyperplasia. Convalescence in these cases is usually prolonged and the likelihood of persistence of hyperthyroid symptoms is much greater. In other words, a coöperative study carried out by Dr. E. R. Arn and myself in over 1,000 cases of Graves' disease has given us considerable assurance that the prognosis can be reasonably determined by the histopathological changes observed in cases of Graves' disease.

The second part of my thesis is concerned with a constitutional basis for hyperthyroidism. The introduction of the term "toxic adenoma" into medical terminology initiated a controversy, the extent of which is reflected in the conflicting reports which have occupied a prominent place in medical literature since that time. Even among those who have adhered most strictly to the beliefs of Henry Plummer, that so-called toxic adenoma and Graves' disease are separate entities, distinct in their clinical manifestations and entirely different in their response to lugolization, there has been no unanimity of opinion regarding the pathological manifestations of the diseases bearing these names.

In keeping with the remarkable advances in thyroid surgery during the past decade, the pathologist has had an ever-enlarging opportunity to contribute something to a solution of this problem. Many pathologists have been puzzled by their inability to reconcile the clinical manifestations with the pathological findings. The clinical concepts of the disease have become greatly widened and we speak of Graves' disease, exophthalmic goiter, toxic adenoma, toxic goiter, hyperthyroidism, thyrotoxicosis, *et cetera, ad infinitum*, without any well-defined criteria as to where one begins and the other leaves off. Are they all part of a single clinical ensemble or are they separate entities?

If the pathologist finds definite evidence of epithelial hypertrophy and hyperplasia, then the solution of the problem is easy; if not, he is in a dilemma. We have learned that it is often impossible to adjust the pathological findings to the clinical findings on a basis of epithelial changes alone. The question arises, are there any morphological criteria which will give unity to all of the clinical concepts of hyperthyroidism or dysthyroidism? Warthin was the first in this country to state that there is. Symptom after symptom has been added to the original triad of Graves' disease—goiter, tachycardia, and exophthalmos—until any accurate differentiation between Graves' disease and so-called toxic adenoma has become almost impossible. Warthin believes that all individuals with hyperthyroidism present the clinical picture of a well-defined type of human individual—a distinct pathological constitution. Certain Europeans have called this diathesis the "hyperthyroid constitution," but in the absence of evidence that there is an actual hypersecretion of the thyroid gland, Warthin proposed the more general name, "Graves' constitution."

The individual with Graves' constitution usually presents certain characteristic physical and psychic stigmata. The skeleton is ordinarily that of a slender and delicately formed individual. The facies give the impression of an alert, wide-eyed, quick-reactioned person. Muscle tremor is present. The skin is moist, warm, and delicate, and has a tendency toward excessive pigment formations, hyperidrosis, and dermatographia. The thyroid gland and cervical lymph nodes are usually, but not always, enlarged. The pulse is full and rapid, with a relatively high pulse pressure. Tachycardia is invariably present; in some cases, disturbances of the cardiac rhythm are present, such as auricular fibrillation or, in rare cases, auricular flutter. There is evidence of central nervous system instability, as manifested by exaggerated emotional responses, repeated so-called nervous breakdowns, occasionally with the development of a true psychosis. In most instances, however, the mentality remains well preserved. Sympathetic nervous system imbalance is usually a prominent feature, manifested by vasomotor instability, hyperidrosis, dermatographia, localized flushings, and so forth. The basal metabolic rate is persistently elevated. The individual consumes an excess of food

and loses weight. The sugar tolerance becomes diminished and the individual sometimes develops true hyperglycemia. The blood picture shows ordinarily a mild secondary anemia and a relative lymphocytosis. There is almost invariably an exaggerated sexual urge, usually associated with physical inadequacy. In other words, the general picture is that of an individual who presents stigmata of juvenile morphology associated with rapid functional reactions.

It is undoubtedly true that many individuals who have presented one or two of the stigmata of Graves' constitution have been unwisely subjected to thyroidectomy on inadequate evidence. In such cases, the pathologist will look in vain in the microscopic sections for any evidence of the pathology of hyperthyroidism. But in those cases in which the clinical diagnosis of hyperthyroidism is well established, we have convincing morphologic evidence of a distinct underlying constitutional entity in the constant presence of hyperplastic lymph follicles in the thyroid glands of individuals with hyperthyroidism. If these individuals die and come to autopsy, one finds certain associated pathological findings. For instance, the individual with hyperthyroidism has invariably an enlarged thymus—a persistent hyperplastic thymus. The spleen is enlarged and shows lymphoid hyperplasia. The Peyer's patches and solitary lymph follicles of the intestinal tract and the lymph nodes are generally hyperplastic. The adrenals are hypoplastic, greatly reduced in size, usually with marked medullary hypoplasia. If one considers that the medulla of the adrenal and the sympathetic ganglia have a common derivation from the neural crest, then one has some clue as to the close relationship between this medullary hypoplasia of the adrenals and the sympathetic nervous system manifestations of this disease. There is cardiovascular hypoplasia in most of these cases.

In other words, these individuals present the general picture of the thymicolymphatic constitution. This background exists from birth. The hyperthyroid individual is therefore predestined to hyperthyroidism from birth. He will acquire hyperthyroidism if the necessary precipitating stimuli are applied, such as infection or excessive emotional experiences. In many individuals the signs of mild hyperthyroidism will be present throughout life, as commonly seen in the quick-reactioned individual, the producer, the hard worker. The evidence of fully developed hyperthyroidism does not manifest itself in such persons because the precipitating stimuli have been insufficient to induce the clinical picture of well-advanced hyperthyroidism. We have, therefore, clinical and pathological evidence that there is a distinct constitutional basis for hyperthyroidism, that it chiefly involves the endocrinal system, the sympathetic nervous system, and the lymphoid apparatus. Furthermore, we find no support for the thesis that Graves' disease and so-called toxic adenoma are distinct entities. The disturbance of the thyroid gland is but one link in a long chain, but, fortunately, a chain which can be broken satisfactorily by proper surgical intervention in the cases in which this procedure is justified.

TRAUMATIC SURGERY OF THE GENITOURINARY TRACT *

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Traumatic injuries involving the urogenital organs as seen in industrial regions has increased several hundred per cent in the past ten years. In a review of the literature and textbooks on the cause and treatment of injuries of this tract, we find but very little, and what there is shows clearly the marks of opinion of those of earlier times. So much change that very little is gotten that is recognized as good accident surgery of the modern day. The lady no longer has the protection of her corset. Motors have changed the occupations and travel of man so much that injuries are received differently, are more extensive, and require different treatment.

The external genital organs are more liable to injury in this motorized age of travel and industry. Wounds of the penis may be accidental or self-inflicted. When the urethra is torn and spongy and cavernous bodies injured, they requiring suturing and a firm catheter inserted to hold sutures and dressings in place. Escape of blood into the spongy tissue must be evacuated and treatment directed to prevent deformity.

Priapism following spinal fracture usually subsides when the pressure is relieved. Priapism due to traumatic thrombosis of corpora cavernosa is relieved by incision into one or both cavernosa.

Nature has well protected the scrotum and testicles in their anatomical shape and location. Even so protected, the scrotum may be torn away and one or both testicles severely injured in athletes and in those engaged in industrial work. Conservative

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surgery is always indicated, and good results are gotten (infection excepted) when the blood supply is not destroyed. When confronted with an enlargement in the scrotum, one should keep in mind the old rule that tuberculosis involves the globus major, gonococcus the globus minor, and syphilis the testicle itself. In hydrocele and hematocele of traumatic origin, the swelling occurs rapidly and should be dealt with palliatively or radically, depending on the individual case.

The question of traumatic epididymitis becomes increasingly more important as time goes on. The number of cases for examination and opinion as to compensation is steadily increasing, both in the doctor's office and in the courts. At the time the patient asks for this examination, pus is almost always gotten from both the prostate and the seminal vesicles. Whether this preceded or was caused by the infected epididymis is not always easy to determine. Some may have had lesions of the kidneys for some time, recognized or unrecognized. Many others may have, and very often do have, a combined infection of the urinary or genital tract for years, either recognized or unrecognized (many prostatics go for years unrecognized). All of these individuals are potentially subjects for epididymitis and it very often occurs, whether in an accident or not. In any of the above subjects who happens to be shaken up in a common carrier or otherwise, an epididymitis may develop days or months afterwards. How easy it is for a patient, assisted by an aggressive lawyer, to assign the epididymitis to the slight injury which he had almost forgotten, and compensation is thereby applied for. Day[1] says that if there is no existing source of bacteria, even though there is an injury to the testicle or epididymis, inflammatory reaction will not result. From a long study of these cases it appears to me that practically every case of epididymitis following accidents there is a latent or active infection of the genitourinary tract. The same can be said as to orchitis. We have seen athletes repeatedly injured in the testis, producing severe pain, who do not develop epididymitis.

Torsion or axial rotation of the spermatic cord occurs suddenly and is believed to be almost always due to exertion. If diagnosis is made early, it should be cut down on and an attempt made at rotation. If a testicle is gangrenous, it must be removed. If the torsion is in an undescended testicle, as it often is, it should be dealt with as in strangulated hernia.

Rupture of the vas deferens is due to external violence or sudden strain. If intraäbdominal, the blood occurs in the urethra; if extraäbdominal, the hemorrhage is in the testicle and scrotum. If hemorrhage persists, an open operation is indicated and removal of the testicle may be necessary.

In severe contusions, the prostate and seminal vesicles may be traumatized, but an injury severe enough to do this will likely have caused sufficient damage to other structures so that the patient will be well on his way and surgery will be of no avail.

A reflection of the anatomy and physiology of the perineum in both sexes shows how perfectly nature has done her work. Each time I read over the description of the central tendon, the triangular ligament, the erector and sphincter muscles, it becomes increasingly interesting. A good working knowledge of these structures is very essential for any one doing any kind of surgery on these parts. They are to the genitourinary surgeon what the steering wheel and clutch are to an automobile. An injury to the erecti or "cut-off" muscles or their nerves may give very embarrassing and permanent results, some of which are incapable of repair, such as loss of sexual act and incontinence of urine. Also, one finds a good understanding of the triangular ligament and "cut-off" muscle very useful in treating gonorrheal patients.

There is a wide difference in the clinical and pathological pictures between injuries of the kidney, bladder, and urethra; but these structures have certain things in common, such as hemorrhage, extravasation, etc. Analyze the hematuria and you will often locate the structure injured.

The way in which the traumatism occurred helps us in evaluating the symptoms of supposed rupture of the urethra. Injury to the first part of the fixed urethra at the triangular ligament is often produced by falling astride an object. Rupture of the membranous portion from contusion of the pelvis has been the most common in my experience. We expect such symptoms as pain, bleeding, disturbance of urination or complete anuria, tenderness, and tumefaction. Any of these may be absent, due to the degree of trauma and location. A very typical symptom is blood appearing at the meatus, independent of urination. However, this may be absent when there is no break in the mucosa or when the injury is behind the "cut-off" muscle. The patient may be able to void, or he may state clearly that the pain and tumefaction in the perineum did not come on until he attempted to void. The history, symptoms, and your knowledge of the perineum should make the diagnosis and direct your treatment.

Should we attempt to catheterize the patient? Concerning this I shall quote directly from Young's[2] *Practice of Urology*, in which he says: "This usually does no good and insures infection. Whenever there is any question of a rupture of the urethra, all instrumentation should be avoided. If there is no injury to the urethra, catheterization is not necessary; if there is injury, there should be immediate operative exploration."

When to operate: The time to operate is immediately after the diagnosis is made.

Method of approach: The method of approach may be governed somewhat by the way the injury occurred and its extent. Should approach through the perineum be decided upon, the patient should be placed in the lithotomy position. Local or regional anesthesia is indicated. The incision should be made in the midline, directly over the tumefaction or the end of a sound, and carefully directed backward in the midline, watching carefully the structures as each step is taken. Indwelling catheter with sutures or only a drainage tube may be fastened in.

There is a question whether or not, in traumatic rupture of the membranous urethra occurring with fracture of the pelvis, it is not better to sidetrack the urine by cystotomy. Later, should the patient not void spontaneously, a secondary external urethrotomy can be performed. When doing this, the opening in the bladder may be of much assistance in retrograde catheterization. There are reasons for the bladder approach: (1) Forcibly flexing the thighs on abdomen (which is the only way proper exposure of the perineum can be gotten), the already fractured pelvis may produce more damage and become more serious than it already is. (2) Should one not be successful in finding the proximal end of the urethra, cystotomy probably would have to be done. (3) In a case with shock or hemorrhage, the cystotomy can be done under local or general anesthesia with less hazard to the patient. (4) Should the bladder be ruptured, as it sometimes is when not suspected, the cystotomy is always indicated. In one of my cases I chose to do a cystotomy; the bladder was not ruptured, but there was hemorrhage into the pelvic tissue, which was controlled by packing. Had the cystotomy route not have been taken in this case, the results may have been bad. I believe many patients' lives are saved by taking the bladder route.

Rupture of the Bladder.—In a patient suspected of rutpre of the bladder, here again the history is often very helpful. Pain, hematuria, or "bloody anuria" may be present or absent. "Bloody anuria" is supposed to be pathognomonic of rupture of the bladder, but it isn't. The rupture may be intra- or extraperitoneal. Shock may be present when the bladder is frankly ruptured. Extravasation of urine following injury anywhere in the urinary tract is both a benefit and a harm. It helps you locate the injury and also complicates it. Many good recommendations are given to aid in diagnosis of ruptured bladder; notably, filling the bladder with clear water and see if it *all* returns and the character of same. Another, filling the bladder with air and fluoroscope the region to see if the air leaves the viscus, and, if so, where. Other things can be done, as can watchful waiting. When in doubt, it is often good surgical judgment to explore the bladder by open operation immediately.

Reflex Retention of Urine.—The exact mechanism of this type of retention is not clear. In some way the normal functioning reflex arc is broken in the higher and lower centers. It is mentioned here because we must differentiate from traumatic retention and catheterize early and frequently. Distention produces a derangement of circulation which is the primary cause of infection following catheterization.

Traumatic Bladder.—The atrophic bladder from spinal injury should be left alone. They will establish paradoxical incontinence of urine. The same is true in tumor of the spine. In the complete transverse lesion there is absolute loss of vesical sensation and sexual power. The bladder may become greatly distended (without pain), urine begins to escape; in from twelve to thirty hours the distention gradually diminishes, and in from ten to twenty days the automatic voiding will effectually empty the bladder every two or three hours and the urine will be uninfected. In the incomplete spinal lesion, where the motor tract is divided and there is resulting distention with severe pain, cystotomy is better than the use of the catheter.

Tabetic Bladder.—In the tabetic bladder both sensory and motor centers are involved, resulting in an overflow of incontinence. The disease may progress to complete sphincter paralysis with true incontinence. One should be very guarded about doing any instrumentation on these cases, especially if urine is sterile; infection will follow, and very alkaline urine favors stone formation. Where there is much annoyance from distention and incontinence, we have to choose between cystotomy and catheterization.

Ruptured Ureter.—Most injuries of the ureter are due to operations. (This could be avoided by pre-operative placing of ureteral catheters.) When the walls are diseased, a ureteral catheter may break through very rarely, with no bad results. Attempts at anastomosis and results gotten are not very satisfactory, and, according to Goldstein,[3] good results are gotten by placing cut ends as nearly together as possible and covering them with whatever tissue is at hand. When the proximal end of the ureter can be made to reach the fundus of the bladder, it should be transplanted there.

Kidney Trauma.—In traumatic injury of the kidney, we may be governed by a fairly definite rule directly opposite from that followed in injury to bladder and urethra. In case of doubt, in rupture of bladder or urethra or both, operate immediately. When in doubt about operating in an injury or rupture of the kidney, wait. This rule is not infallible, but will serve the patient and the surgeon well who observes it over a considerable number of cases. The prognosis of a ruptured kidney is better than that of the injury of many other internal organs. The anatomical location and its peritoneal fat is a great protection to the kidney; again, the fatty capsule means very much to a kidney, whether or not it is injured.

In inflammatory diseases of the kidney, the pain is aching in character and is increased by pressure. In non-inflammatory diseases, the pain is more severe, paroxysmal, but not increased by pressure. Traumatic kidney pain is constant, not often severe, and increases on pressure. Squier[4] says: "True kidney pain is deep-seated, and the patient will tell you that it is removed from surface of body."

Injuries to the kidney fall into three main groups, namely: those in which the parenchyma is fractured, with or without the capsule; those in which the fracture extends into the cavity of the kidney, and those in which the vascular pedicle is torn—the latter being the most serious. In all of these, in a broad sense, it is usually the best judgment to withhold surgery for forty-eight hours. Certainly it would seem that an immediate surgery should be out of the question except in the most unusual instances. Aside from severe hemorrhage, there is no other justification for operation except infection. Transfusion is often a great help in kidney hemorrhage from injury. In those with a single kidney, an injury to that organ is often fatal. Keyes,[5] in his textbook on urology in 1923, reported only four cases that he operated upon.

Influence of a Movable Kidney.—Of the many causes producing movable kidney and ureteral kink, trauma is to be considered. Trauma can cause a movable kidney, though not frequent and more often looked for in the female. Movable kidney is more often the result of a multiplicity of causes. Dr. J. J. Bell, of Liverpool, England, states that he has observed 300 girls with a movable kidney who were employed in industrial work too early in life. Probably all of these cases were the result of a number of causes.

If our foresight were as good as our hindsight, we would probably do many things differently and frequently to the advantage of the patient. Those who look after industrial accidents should strive to be able to decide, without embarrassment, upon the best method of procedure in cases of grave injury. To avoid prolonged invalidism, often to save life, an intelligent decision as to what to do should be promptly made.

I am told by men of standing, who were doing good surgery twenty-five years ago, that the mortality of genitourinary injuries resulting from fractured pelves, etc., was very much higher than that under the management of today.

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THE TREATMENT OF NEUROSYPHILIS*

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The invasion of man by the *Spirocheta pallida* produces infection capable of setting up numerous and widely divergent symptom complexes, all of which must be called syphilis. It becomes desirable for purposes of diagnosis and treatment to separate this protean disease into its various types; hence the entity neurosyphilis. Nor is this sufficient; various forms of neurosyphilis are readily recognizable, leading us at once to further subdivision and classification. Therefore, we find ourselves confronted with a threefold problem; that is, does a given patient have syphilis; if he does, is the nervous system involved, and, if so, what is the type of involvement? This three-sided question must be answered not only

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by every syphilologist but by every physician who treats even a single case of syphilis.

Diagnosis.—As the proper selection of treatment must depend upon exact differential diagnosis, we will consider this part of the subject first.

Every individual who has syphilis or is suspected of having syphilis merits a complete history, physical examination and neurological examinaton. In addition, Wassermann and Kahn reactions should be routine, and no examination is complete without a survey of the spinal fluid.

These statements apply with equal force to the primary and secondary stages of infection. However, the neurological and spinal fluid examinations of such cases are usually deferred until the end of the first year of treatment. In all patients who have passed beyond the secondary stage, the complete laboratory and clinical survey should be made prior to the administration of any treatment.

Classification of Neurosyphilis.—It is probable that no single classification would be aceptable to every one. I feel, however, that the following grouping, based on the suggestions of Moore[1] and Stokes,[2] has the virtue of simplicity and applicability:

(*a*) Meningeal.
Acute syphilitic meningitis.
(*b*) Diffuse cerebrospinal syphilis (meningeal-vascular-parenchymatous).
Myelitis.
Gumma of brain and cord.
Endarteritis with thrombosis (syphilitic hemiplagia).
Paresis sine paresi.
(*c*) Tabes dorsalis.
(*d*) Paresis.
(*e*) Primary optic atrophy.

It is recognized, of course, that not every case will drop automatically into the foregoing classification. Various clinical syndromes are encountered in which several different types of involvement may be recognized. For instance, an individual with paresis may, in addition, develop a syphilitic hemiplegia or exhibit evidence of some other purely focal vascular involvement.

We will attempt to outline the criteria for classification and describe briefly the methods of treatment employed in each group.

(*a*) The most frequent symptoms of acute syphilitic meningitis are headache, anxiety, easy exhaustion, and general malaise. There are usually no neurological signs except hyperactive reflexes. The blood Wassermann is strongly positive. The spinal fluid is under increased pressure. The cell count is usually above 200 cells per cubic millimeter and the total protein may be increased. The spinal fluid Wassermann varies, but nearly always exhibits some degree of positivity. The colloidal gold curve is negative or gives a weak reaction in the middle zone. The condition is present much oftener than it is detected. Meningitis has been shown to be a frequent accompaniment of secondary syphilis and probably accounts for the headache and hyperpyrexia observed during this stage.

(*b*) Diffuse cerebrospinal syphilis is a rather heterogeneous collection of loosely related lesions. The neurological signs depend upon the tissue chiefly involved. This may be the blood vessels of the brain, the meninges or the parenchyma. In this group the blood Wassermann is quite variable and inconstant, but is positive in the majority of instances. The spinal fluid findings are also quite variable. The spinal fluid Wassermann is often only weakly positive. In syphilitic hemiplegia it may be entirely negative except when large amounts of fluid are used (0.6 and 1 c.c.). The cell count is usually low and the total protein not much increased. The gold curve may be paretic or luetic in type. At times the curve will change from the paretic to the luetic during treatment. In paresis sine paresi the laboratory findings all conform to the typical paretic formula, but there is no clinical evidence of the disease. The advisability of considering syphilitic hemiplegia as neurosyphilis is certainly open to question. The lesion (sclerosis and thrombosis rather than hemorrhage), although purely vascular, manifests itself entirely through the nervous system and hence is included.

(*c*) The classical signs and symptoms of tabes are well known and need not be discussed here. When tabes is considered one usually thinks of cord involvement alone. It is true that the most frequent point of damage is in the lateral and posterior columns of the cord and in the dorsal root ganglia. However, there is usually cerebral involvement also, the lesions occurring most frequently at the optic chiasm or in the interpeduncular space. Pupillary reactions should always be studied in a darkened room. Discrepancy in the size of pupils should not be considered as pathognomonic evidence of lues. The condition may be congenital or may be due to abdominal disease. Pronounced hippus and loss of the consensual reflex are of interest, as they often precede the development of the typical Argyll-Robertson pupil.

In suspected tabes the gait and stance should be carefully observed. Various modifications of the original Romberg are in use and are helpful. The loss of periosteal pain on deep pressure over the tibia is very suggestive.

In tabes the blood Wassermann will be negative in at least 50 per cent of cases. The spinal fluid Wassermann is usually positive, but may be negative as in the so-called "burned out" tabes. The gold curve is in the middle zone. The cell count and protein content are variable.

(*d*) Paresis is in reality a syphilitic meningo-encephalitis. The pia and cortex bear the brunt of the spirochetal invasion. It is very difficult to say that any particular type of mental derangement is typically paretic. The classical delusions of grandeur are rarely encountered. Speech defects, mental confusion, and disorders of behavior are seldom sufficiently characteristic to support the diagnosis alone. Three recent cases serve to illustrate this point. In each instance, after the history was taken a provisional diagnosis of paresis was made. The final diagnosis in the first case was tumor of the parietal lobe; in the second, encephalitis; and in the third, alcoholic dementia. Only the most careful and complete examination will prevent the commission of serious mistakes. One marvels at the ability of the alienist who is able to determine a prisoner's mental status after engaging him in conversation for half an hour.

The blood Wassermann is practically always strongly positive, as is the spinal fluid Wassermann. The cell count and total protein are both increased. A strong curve in the left-hand zone is obtained with the colloidal gold reaction. Spinal-fluid pressure is usually increased.

(*e*) I wish that I could, in some manner, impress my worthy friends, the ophthalmologists, with the fact that every case of ocular syphilis demands a lumbar puncture. When the spinal fluid of individuals suffering with a syphilitic iritis or retinitis is examined, it is the rule to find evidence of an early but active involvement of the nervous system. The reaction is usually meningeal in character, with rather marked increase in cell count. The spinal fluid Wassermann is variable and the blood Wassermann is usually positive.

In primary optic atrophy the spinal fluid Wassermann is usually positive, but it may not be strongly so. Optic nerve involvement may be accompanied by other clinical evidence of neurosyphilis, or it may be the sole objective finding.

Treatment.—In any consideration of treatment of neurosyphilis, several basic principles are so firmly established that they must form the groundwork of any therapeutic plan.

Principle No. 1. While a routine method of attack is often desirable in early syphilis, it is never to be applied when the nervous system is involved. Each case requires the most careful individualization. Treatment must be adapted to the patient in preference to the attempt to apply to each case some rigid preconceived therapeutic schedule.

Principle No. 2: Collect all information obtainable from both clinical and laboratory sources before deciding on an individual plan of treatment.

Principle No. 3: Never "hammer" the aged or the markedly degenerated patient. Impending dissolution is greatly hastened by vigorous treatment, and the overambitious syphilologist receives full credit for the final demise.

Principle No. 4: Refuse to be hurried. Follow the general condition of the patient by weight, condition of appetite, blood pressure and blood count. If treatment is poorly tolerated, institute frequent rest periods regardless of the patient's desire to get well quickly.

Principle No. 5: Attempt to determine the ability of the patient to develop an immunity to his own infection. This may be depended on, to some extent. The protective reaction of the body tissues is more marked in women than in men, especially when pregnancy supervenes.

We will now consider the plan of treatment which may be adapted in a general way to each group of our previous classification: .

(*a*) It is rather easy to overtreat an acute syphilitic meningitis, particularly with the arsphenamines. The preferable method is to employ bismuth in a first course of twelve treatments at weekly intervals (potassium iodide is given continuously). Salvarsan is given in moderate dosage on the third, sixth, ninth and twelfth weeks in combination with the bismuth. Spinal drainage is performed on the sixth and twelfth weeks. At the end of this preliminary course the patient is placed on mercurial inunctions for one month. He may then be given routine intensive treatment with occasional spinal-fluid control.

(*b*) In dealing with the diffuse cerebrospinal group, great care should be exercised in the preliminary stages of treatment. Here we find most advanced evidence of nerve and organ degeneration. Each patient should receive a three weeks' preparatory treatment with mercury by inunction and

potassium iodide by mouth or vein. At the end of this time, give six injections of bismuth or bismarsen. Then change to salvarsan (usually a short series of six to eight injections) and return to a month of inunctions. The bismuth and salvarsan series is repeated and is followed by two courses of tryparsamide of fifteen injections each at weekly intervals. Between these two courses bismuth is often given with the tryparsamide or between the courses of this useful drug. After an additional three months of inunctions the case is restudied and the treatment plan modified in the light of the new findings. If the serology continues unchanged, fever therapy must be resorted to.

When a real transverse myelitis is suspected, avoid lumbar puncture and intraspinal treatment as much as possible. If the lesion is purely vascular, avoid intraspinal therapy and utilize long courses of bismuth and mercury.

(*c*) It is always wise to begin treatment in tabes by the usual preliminary preparation of mercury and iodides. This avoids the troublesome complication of increased root pains so often encountered if this precaution is not observed. I then begin the first series of Gilpin drainages, performing a drainage once a week for eight weeks. After three months on inunctions the second series of eight drainages is carried out. Again a semi-rest period of inunctions and iodides (three months) is followed by the third and last series of six drainages. Bismuth or bimarsen may be used between series instead of mercury. If the serology is very resistant, intraspinal treatment by the original Swift-Ellis method is employed. The Gilpin drainage or its modifications is a very useful procedure in the treatment of tabes. After its advocacy by Gilpin and Dercum it came into some prominence, but an unfavorable report by Stokes[3] served to delay its general acceptance. Despite theoretical objections the results obtained by many observers serve to establish the procedure as a valuable aid in the treatment of this form of neurosyphilis. Reid[4] reports excellent results in one hundred and sixty-four cases in which drainage was the only intraspinal method used. In my own cases I have observed a very gratifying disappearance of bladder symptoms, lightning pains or incoördination. The general health and strength of the patients has improved and the weight has increased. In three patients discharged the past month the blood and spinal fluid have been negative for more than a year. I have recently begun to employ tryparsamide with drainage, but it is as yet too soon to evaluate the results. We have modified somewhat the original technique by always using a full dose of salvarsan (0.9 gr. of neosalvarsan or 0.6 gr. of arsphenamine), followed immediately by drainage. As much spinal fluid as possible is removed; usually about 30 to 40 c.c. The concentration of the arsenical is naturally greatest in the blood stream just after injection. If the drug may be made to pass the choroid plexus by "forced drainage," the period of greatest concentration should be the most favorable time for this to occur.

We have found in reviewing the work of authors opposed to the method that not enough drainages were done; not enough spinal fluid was removed at each drainage; the treatments were too widely separated and too long a time was allowed to elapse between the administration of the drug and the emptying of the subarachnoid space.

There are, of course, the additional advantages of relative safety, usual lack of reaction, and ease of performance under various conditions.

In addition to specific treatment, well directed physiotherapy and muscle reëducation is of great value to tabetics. Heel and toe exercises and practice in balancing should be encouraged at all times.

(*d*) The development of the modern treatment of paresis must surely be recognized as a true epic of medical research intelligently applied to clinical problems. The entire subject was stimulated and lifted from the doldrums of inactivity by the daring experiments of Von Juarregg carried out during the war period. We will consider this subject from the standpoint of (1) fever therapy and (2) chemical therapy:

(1) It is impossible to say just how many patients have to date received fever therapy in some form. The number is large, however, and is increasing daily. Sufficient time has elapsed to begin to evaluate the end results obtained in this large group.

One is immediately impressed with the percentage of remissions obtained in the various clinics with malarial inoculation and the close numerical relationship that these reports bear to one another. It is evident that criteria for selection of cases, virulence of strains of malaria in use, and methods of safeguarding the patient must be fairly uniformly established over the entire world. In brief, our procedure is as follows: The patient is inoculated intravenously with 2/5 c.c. of malarial blood. At the onset of the first chill he is placed in the hospital and allowed to have ten to fourteen paroxysms (temperature 103° and over). During this time the blood pressure, hemoglobin, weight, and appetite are observed daily.

If the blood pressure falls below 90 systolic or the hemoglobin below 70 per cent, the infection is terminated. Any marked loss of weight is also a signal for interruption of the malaria. After a sufficient number of paroxysms has occurred, the induced infection is eliminated by the administration of ten grains of quinine three times a day for one week.

Other forms of fever-producing organisms, such as sodoku and relapsing fever, have been employed but have not met with general adoption.

Many observers feel that in true paresis a satisfactory malarial course accomplishes all that may be expected in a therapeutic way and make no use of antisyphilitic therapy in any other form. Time must decide the wisdom of this course.

Kunde, Hall, and Gerty,[5] in 1926, announced, in a preliminary report, the use of typhoid vaccine instead of malaria for the production of chill and fever. The method seems to be confined to this country. End results of only about two hundred cases have appeared in the literature. The advantages of the method are low mortality, control of height of temperature, safely increased number of paroxysms, and availability. The results reported are favorable, but the percentage of clinical and serological response is somewhat lower than with malaria. Kemp and Stokes[6] have advised the employment of tryparsamide at the height of the fastigium. The method is undoubtedly of great value and deserves further study under control conditions.

(2) Chemotherapy: As has been suggested previously, all drugs which have value in the general treatment of syphilis also have a place in the management of the different types of neurosyphilis. It is therefore unnecessary to consider each drug separately. At present there is considerable discussion as to the relative merits of arsphenamine and neoarsphenamine. It is probable that the proponents of these two drugs are chiefly actuated by habit, early training, or vague clinical impressions. While I have a certain leaning toward arsphenamine, I do not feel that there is any data available which seems to evaluate accurately the two drugs. Before leaving the subject of arsphenamine, allow me to fire one more shot at the myth of "development of neurosyphilis by the use of arsphenamine." There is not one single shred of evidence to support this contention. Cause and effect have been reversed. The development of neurosyphilis has been promoted frequently by the insufficient use of salvarsan; never as a result of full and extended dosage.

Bunker,[7] Cady,[8] and Lorenz,[9] among others, have indicated the great value of tryparsamide in the treatment of paresis. It seems very likely that under institutional conditions the results obtained with this drug compare favorably with those obtained with malaria. Bunker has pointed out the inadequacy of the usual dose of the drug, and urges the use of large numbers (50 to 100) of injections. I feel that the dangers of ocular damage have been overstated. Nevertheless, when the drug is being administered we examine the eyegrounds and check the visual fields at frequent intervals. We feel that tryparsamide is of great value in that rather large group of cases which have not suffered extensive mental changes. Failing effectiveness of work, personality alterations, and slight speech defects may be present for some time. Examination of the spinal fluid reveals a typical paretic formula. These patients are considered ambulatory in this country, and we feel that excellent results may be obtained with tryparsamide. The dosage is usually begun at 1.5 grams and is rapidly raised to 3 grams.

With ordinary care, tryparsamide is a relatively safe therapeutic agent. This can not be said of malaria, and we wish to sound a note of warning against the indiscriminate use of malaria by those unfamiliar with the procedure. Well-developed hospital facilities, as well as experience, are required before the work can be safely undertaken. It is also very difficult to maintain an infectious strain of the parasites unless the supply of material is unusually large. Under such circumstances we have devised a treatment plan as a substitute for malaria:

(*a*) A preliminary course of six injections of salvarsan (neosalvarsan 0.75 gr. or salvarsan 0.4 gr.) is given as soon as the patient comes under observation. Injections are made each fifth day. The iodides are also given in the usual dosage (10–15 grains three times daily).

(*b*) The patient is then hospitalized and the following schedule instituted:

First day: Typhoid vaccine (25 million) and tryparsamide, 1.5 gr.

Fourth day: Typhoid vaccine (50 million) and bismarsen.

Eighth day: Typhoid vaccine (75 million) and tryparsamide, 2 gr.

Twelfth day: Typvoid vaccine (100 million) and bismarsen; drain spinal canal.

Sixteenth day: Typhoid vaccine (125 million) and tryparsamide, 2.5 gr.

Twentieth day: Typhoid vaccine (150 million) and bismarsen.

Twenty-fourth day: Typhoid vaccine (175 million) and tryparsamide, 3 gr.

Twenty-eighth day: Typhoid vaccine (200 million) and bismarsen.

Thirty-second day: Typhoid vaccine (250 million) and tryparsamide, 3 gr.

Thirty-sixth day: Typhoid vaccine (300 million) and bismarsen; drain spinal canal.

The dosage of foreign protein is, of course, adjusted by the degree of febrile reaction obtained. It is better to be radical in dosage rather than conservative. The patient is then discharged from the hospital and placed on long series of tryparsamide injections (15–20 to a series). Bismarsen is also given with the tryparsamide to bolster the weak spirocheticidal action of the latter drug.

After six months' treatment the patient is restudied from both a clinical and a laboratory viewpoint and a decision reached as to further treatment. When considered necessary, there is no contraindication to the repetition of the foreign protein injections.

(*e*) The response to any form of therapy in a well-established optic atrophy is certainly rather doubtful. It is probable that best results are to be obtained by intensive and repeated courses of intraspinal therapy by the original Swift-Ellis method. This should be preceded by a preparatory course of iodides, mercury and bismuth. The iodides are given continuously.

DISCUSSION OF TECHNICAL METHODS USED IN THE MANAGEMENT OF NEUROSYPHILIS

Serological Examination. — The word *egg* is applied both to the fresh product of the proud Plymouth Rock and the odoriferous pellets commonly hurled at unpopular speakers—but what a difference there is! So it is with the Wassermann reaction.

A report emanating from a laboratory under the direction of a conscientious clinical pathologist using a standard technique is of great value. All others must be considered questionable.

There is no need or place for discussion pertaining to the relative superiority of the Kahn or Wassermann reactions. In the absence of syphilis the two tests will agree in practically all cases. A small percentage of positive cases will be detected by the Kahn which will be missed by the Wasermann, and *vice versa*. It is obvious, therefore, that, in order to obtain the greatest accuracy, both tests should be performed on all sera. Both reactions have been used routinely at the Wheeling Clinic since 1925. It should be emphasized that the Kahn precipitation reaction is not a "short cut" or an "office" procedure. It requires careful adherence to technique and the interpretation of a competent serologist. The quantitative set up in both tests is extremely helpful in following the effect of treatment. It is, of course, an integral part of the Kolmer modification of the original Wassermann. Most good techniques are "safe" in the sense that they do not yield false line mining all cases of syphilis. The danger of the reaction lies in false negatives, not in false positives. It must be remembered that the Wassermann, using, as it does, non-specific antigens, is not a test for the presence of syphilis in the sense that the dark-field examination is. It is a test of the reaction of the body against the disease. Hence, if time involvement is slight, the serological changes are correspondingly minimal and a falsely negative reaction is obtained.

Lumbar Puncture.—This is a procedure which is never performed often enough either in general diagnosis or in syphilologic control. There is a certain prejudice against the operation in the minds of the laity, due, we believe, to faulty technique. Greene[11] long ago pointed out that neither pain nor post-puncture headache were to be expected when refined methods were used. It is wise never to speak of "spinal puncture." The term "lumbar puncture" is equally descriptive and carries no impression to the mind of distrustful patients.

The essentials of a good technique are as follows:

(*a*) Cleanse the skin of the back thoroughly with alcohol followed by 10% mercurochrome.

(*b*) Never touch the needle anywhere except at the butt.

(*c*) Never touch the skin at the site of puncture.

(*d*) Do not replace the stylet in the needle when the puncture is completed.

(*e*) All punctures should be performed in the lateral recumbent posture. Masson,[12] of the Neurological Institute, has recently collected the reported cases of sudden death occurring immediately after puncture. He found that 90% of the fatalities followed puncture performed with the patient in the sitting position. It is important to pull the shoulders and hips of the patient together. Traction on the head and knees does not flex the lumbar spine. After the back is properly bent, make sure that the plane of the body is at right angles to the surface of the table. Success or failure of the puncture depends

upon the proper widening of the intervertebral space. Therefore, the operator should personally assure himself that the patient is in position before making the puncture.

(*f*) For diagnostic purposes, never use a needle larger than 20-gauge.- Dr. Greene very kindly sent me one of his needles with which he had performed 400 punctures. It was a 25-gauge and could be wrapped around a lead pencil to form a spiral spring. The smaller needles are flexible and bend but do not break. It is sometimes difficult to pass such a small instrument through the heavy interspinous ligament of a large, well-developed man. In such cases I often penetrate the skin and ligaments with a short 18-gauge needle and then pass the small needle through the larger and on into the dural sac. Puncture with a small needle is almost painless. This is important if the intervertebral space is small and is not located at the first attempt. In a needle of this size the point is rather round (much like a cambric needle) and the bevel can be kept short without the sacrifice of penetrating qualities. With this type of point the longitudinal elastic fibers of the dura are separated rather than cut and the opening tends to close spontaneously. If the patient moves the head during the performance of puncture with a large needle, the dura saws up and down over the relatively rigid shaft of the needle and the dural opening is enlarged. A small flexible needle moves with the movement of the dura and the opening is not affected. Again, if the butt of the needle is accidentally moved by the operator in taking pressure readings, etc., the smaller needle bends outside of the skin but transmits its motion very slightly to the dural edges.

If the fluid flows slowly, gentle suction may be made with a 10-c.c. Luer syringe. There is no difficulty in making pressure readings with the small needle, as the height to which a column of fluid rises bears no relation to the size of the column. We do not use the more complicated and expensive mercury manometers. The simple right-angle glass tube with adapter connection is easy to manipulate and is entirely satisfactory. It must be noted, however, that the small needle and plain glass manometer are not suitable for manometric readings in the diagnosis of cord tumors. The column of liquid does not move quickly enough through the restricted channel for standard readings to be made. I feel sure that the bugaboo of post-puncture headache and painful puncture may be almost entirely eliminated by the use of a small needle with the proper type of point. Further investigation of post-puncture headache along a somewhat different line is suggested by the work of Heldt and Moloney of the Henry Ford Hospital. These authors have noted that there is ordinarily a negative pressure in the epidural space equal to 10 mm. of mercury. They felt that this negative pressure tends to suck the spinal fluid out through the puncture opening after the needle is withdrawn, with marked lowering of the subdural pressure. I have been able to confirm their results and have attempted to apply them in the following manner: I withdraw the needle until the point rests in the epidural space, then pause for one minute to allow the outside air to enter the space. It has so far been impossible to evaluate the results obtained.

Conclusion.—We have attempted to show in the preceding discussion that the majority of cases of syphilitic invasion of the nervous system may be discovered and classified by careful, systematic, clinical, and laboratory examination. Intelligent treatment may then be instituted with an expectancy of success varying from 25% to 100%, depending upon the type of involvement, the duration of the disease, the age of the patient, and numerous other factors.

It is unfortunate that such a morbid process as neurosyphilis occurs. If we lived in a medical Utopia, the combination of perfect treatment, by an omnipotent physician, of angelically coöperative patients would soon eliminate the problem entirely.

As such is not the case, we must continue to engage the enemy with vigor and foresight. Above all, do not adopt or allow any one else to adopt a fatalistic attitude to the whole subject. To do so is a confession of ignorance of modern developments in diagnosis and treatment of this insidious malady.

Summary.—1. A classification of neurosyphilis as proposed by previous authors is adopted and presented.

2. The clinical and laboratory criteria on which the classification is based are outlined.

3. Methods and principles of the newer forms of treatment are discussed.

4. The technique of lumbar puncture is described in some detail, and methods are suggested for the prevention of post-puncture headache.

5. A plea is made for an informed and aggressive attitude toward the whole subject of syphilis and to neurosyphilis in particular.

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CASE REPORTS

OSTEITIS DEFORMANS

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Several writers in the past few years have suggested that osteitis deformans is more frequent than commonly reputed, and it is plausible that many unrecognized cases are being treated for rheumatism and similar complaints today.[1] Only by röntgenological examination can a positive diagnosis be established. The most frequently involved bones are the tibiæ, femora, calvarium, pelvis, spine, and clavicles. The most frequently noted symptoms are: Difficulty in walking, muscular twitchings, indefinite bone pain, and physical deformities such as enlargement of the head, which is very often irregular, bowing of legs, and shortening of stature.

Up to the present time there has been a great divergence of opinion as to the etiology. Bascourret and Decourt[2] stress the theory of trophic nerve disturbances as a causative agent for this disease. They regard local hyperthermia, pigmentation, and exacerbations of pain, which they observed in their series of ten cases, as due to a vasomotor syndrome.

E. John and U. Strasser, of Vienna, in reporting a case, assume it to be due to a generalized endocrine deficiency.[3] Their case had symptoms of increased intracranial pressure, and they report successful treatment with intravenous injections of 50 per cent glucose. Among the prominent symptoms they mention fatigue, cramplike pains in the leg, and forgetfulness.

Van Hazel and Andrews[4] have made extensive metabolic studies in their case and explain the pathological picture on the basis of a hypersecretion of the parathyroid glands. They cite German investigators who have found parathyroid tumors (adenoma) in cases of Paget's disease, but there is some confusion in the German terminology,[3] and the cases referred to may have been osteitis fibrosa. All investigators agree that in Paget's disease there is a retention of calcium, magnesium and phosphorus, and an increased elimination of sulphur. In many respects the changes seen in Paget's disease are just the opposite from those which occur in osteomalacia.

In the latter disease there is diminished bone density, spoken of by some as generalized osteoporosis and by others as decalcifications, as shown by the x-ray. There is also present a negative calcium balance due to an increased urinary calcium elimination. Richardson, Aub and Bauer[5] find that generalized skeletal disease with disappearance of salts from the bones, of the type of osteomalacia or osteitis fibrosa, may be explained in certain instances on the basis of overactivity of the parathyroid glands.

Compère[6] reports a case of osteomalacia in which a diagnosis of hyperparathyroidism and tumor of the parathyroid gland was made and confirmed at operation. Symptomatic improvement was very marked in his case following removal of the parathyroid glands.

By contrasting these two conditions, osteitis deformans and osteomalacia, I was led to assume that Paget's disease may be due to a hyposecretion of the parathyroid gland rather than to a hypersecretion, and that it could be successfully treated on such a basis. An article by Bassler[7] further sustained this assumption (although Bassler supposed that the results in his case were due to a rise in the blood calcium).

Report of Case.—The patient, a married, white woman, aged 56 years, was first seen December 9, 1929, complaining of aching pains in the left leg and hip, and difficulty in walking.

Past history: Eight years before, patient had received treatment for goiter elsewhere. It was interesting to note that for years she had lived almost exclusively on a high carbohydrate diet.

Present illness: For two years the patient had noticed an increasing stiffness of her left leg and swelling of her left knee. Her leg was extremely painful at times and she had been unsuccessfully treated for rheumatism. She complained of frequent cramps in her leg and hip, which at times were so severe as to cause her to fall down. The pains were especially severe at night after exertion, and a muscular spasm would draw up her leg when lying down. She was unable to do her customary amount of household work, could walk for only a short distance, and also noticed increasing forgetfulness.

Clinical examination: The patient was a well-nourished, well-developed white woman who walked with an awkward and stiff gait. Her general physical examination was practically negative except for a slight, uniform enlargement of the thyroid. Heart and lungs were normal. Blood-pressure 150/60. There was a noticeable enlargement of the left knee and lower third of the thigh. The skin over this area appeared slightly warmer to the touch, and was very sensitive. Reflexes were normal.

Basal metabolism, plus 16%. Blood counts: red blood corpuscles 3,800,000, hemoglobin 77%; leukocytes 5,850; differential count practically normal. Urine was negative. Blood calcium, 11.8 mg. per 100 c.c.

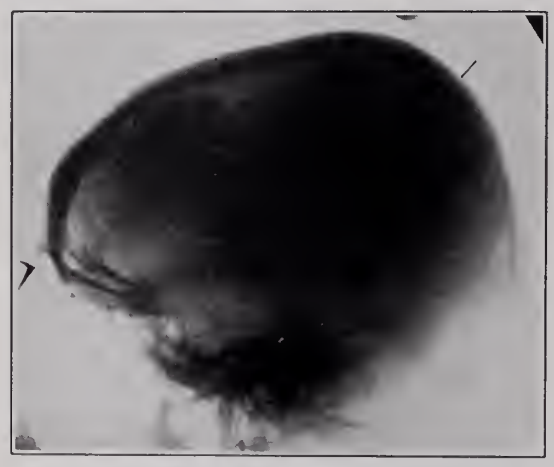

FIG. 1.—X-ray of skull, December, 1929, showing increased thickness and density of cranial vault.

X-ray examination: The left femur showed the characteristic changes of early Paget's disease. The cortex was markedly thickened, and the density of the entire bone increased. This increased density involved the epiphysis. There were no areas of rarefaction, which are often seen in this disease. There was no noticeable bowing of the femur. The pelvis and lower spine showed an irregular, blotchy increase in density. Films made of the head showed no changes in the facial bones, but revealed a uniform thickening of the calvarium with such an increase in density of the bone that the inner and outer tables were obscured (Figs. 1 and 2). The röntgen studies were made and diagnosis was established by Dr. W. A. Quimby of Wheeling.

Treatment: With provisional diagnosis of hypo-

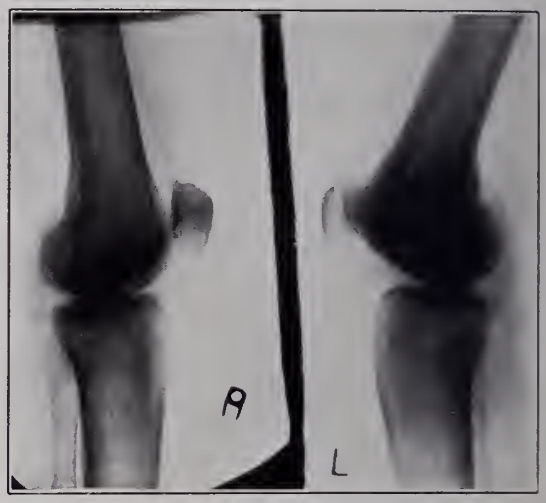

FIG. 2.—Comparison of right and left knee, extreme density of lower end of left femur.

parathyroidism made, the patient went south for three months, and active treatment could not be instituted immediately. She was, however, placed on a low-carbohydrate, high-fat diet, hoping that this would favor a negative calcium balance.[8] When she returned the patient stated that she felt considerably better, but this improvement was only temporary. Treatment with parathyroid extract, Collip, was begun April 23, 1930. Occasional blood calcium determinatiosn were made before and fifteen hours after administration of parathyroid extract, as the greatest response is said to occur from twelve to sixteen hours after administration. The first administration of ten units of parathyroid extract resulted in a fall of the blood calcium to 6 mg. per 100 c.c. Four days later the blood calcium level had again risen to 9.6 mg., and on the next day, following another administration of 10 units of parathyroid extract, it had fallen again to 6 mg. From May 1 until June 23 she had a total of 300 units of parathyroid extract, Collip, by hypodermic injections. At the end of that period the subjective symptoms had much improved. She walked better, felt better, had more endurance, less muscular spasms, and was practically free from pain, except after doing an unusual amount of housework or

walking. After three weeks' rest, treatment was resumed July 14, 1930. X-rays taken at this time already showed some improvement. From July 14 to August 9, the patient received a total of 380 units of parathyroid extract, Collip, by injections. The fall in blood calcium at the end of this period was only from 11.7 to 10 mg. after administration of 40 units of parathyroid extract. This was taken to be a sign of decreasing response to the hormone, and active treatment was stopped.

Results: There was a remarkable improvement in the general condition of the patient. She felt better than she had in years, she was able to walk a greater distance without fatigue, and was able to attend to all of her household duties. She was much stronger, mentally more alert and less forgetful. There still remained a little awkwardness of gait, but she had practically no pain, even after exertion.

X-rays taken August 12, 1930, showed a marked decrease in the density of the affected bones as compared with the original films. The change was apparent in all the affected bones, the pelvis showing the least change. The skull also had taken on a more

FIG. 3.—X-ray of skull, August, 1930, showing decrease in apparent thickness of vault (in the original amounting to ⅛-inch at the place indicated) and diminished density.

normal appearance, the apparent thickness as well as density of the calvarium being considerably diminished (compare Figs. 3 and 4). No changes were observed in the unaffected bones.

The patient was given parathyroid tablets of one-tenth grain twice a day in order to maintain the benefits of the previous treatment, and she has continued to feel well since.

Pathology.—Reviewing the literature on Paget's disease, I thought it feasible to consider the pathological changes in three stages. First, there is an increased density and abnormally high calcium content of the bone without alteration of structure or contour. In the second stage the long bones lose their clear-cut outline; they become curved and thickened, the vault of the skull also increases in thickness, and the trabeculations become coarse and irregular. In the third stage, ne whone is laid down in large amounts simultaneously with bone resorption in other parts, and the density of the affected bone becomes extremely irregular. In this stage the

FIG. 4.—Lower end of left femur after parathyroid treatment.

process of bone destruction and new bone formation can be seen microscopically.

Comment.—Whether the painful muscular spasm observed in this case can be compared to tetania strumipriva or not can not be asserted. But certainly must the altered excitability of muscles be attributed to the changed balance of electrolytes in the body. The metabolic studies of this case, unfortunately, are incomplete. It was impossible to obtain blood phosphorus determinations at the local laboratories. Calcium excretion was checked, but is not reported here because of the patient's failure to collect accurate 24-hour specimens of urine. However, the urinary output of calcium was increased after administration of parathyroid extract, and probably that of phosphorus as well.

The lowering of an abnormally high blood calcium by parathyroid extract in this case is noteworthy. The most plausible explanation is that the calcium excretion took place faster than the calcium dissolution in the bone, possibly because of some change in permeability. A hypothesis of the mechanism by which the dissolution is accomplished has been presented by Greenwald and Gross.[9]

But other factors must be considered, and the problem of the action of parathyroid extract is a very complicated one. Morgan and Garrison[10] have found that vitamin D stimulated the intensity of effect of that secretion. They also showed that the effect is influenced by diet. A final conclusion can not be reached until further investigations have been made, and I hope that more cases of Paget's disease will be subjected to treatment with parathyroid extract and the metabolic changes carefully studied.

Summary.—1. A case of osteitis deformans (Paget's disease) is presented, in which a diagnosis of hypoparathyroidism was made.

2. Treatment with parathyroid extract (Collip) resulted in great symptomatic improvement as well as objective improvement demonstrated by x-rays.

3. It is suggested that hypofunction of the parathyroids is an important etiologic factor in osteitis deformans.

4. It is hoped that the treatment outlined above will be tried in other cases and the results recorded.

1600 Market Street.

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DOUBLE MONSTROSITY, OR SO-CALLED "SIAMESE TWINS" *

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Mrs. K., age 35; seven children, one miscarriage. Delivered by Madam Gross, a registered midwife. Consultant physician called. Delivery was uneventful; buttocks presented, two or three "hard pains," and twins were delivered *en masse*. There was one large placenta, two separate amniotic sacs, and apparently one cord. Diagnosis: Double monstrosity, dead; six months' development; premature.

X-ray shows each child has a fully developed sternum, as well as an entire bony framework. Except as to the point of union, both are normal

FIG. 1.—Photograph of double monstrosity.

(head, limbs, pelvic formation, and so on). The matter of a common or separate stomach was not determined.

It has been frequently pointed out that monsters can be diagnosed before delivery, and, especially with x-ray, this should be more often done. It is quote possible this specimen would have presented some difficulties. Furthermore, it is pointed out that two amniotic sacs preclude a double monster. It woul dnot have held good here.

Since the accouchement of monsters oftentimes requires the exhibition of considerable skill, and cases are on record where the bond of union has had to be severed ere delivery could be consummated, it seems a stroke of exceedingly good fortune to find that the presentation here was by breech or, rather, double-breech, which is the most mechanically perfect way to be had. The midwife is therefore to be congratulated that no more trouble was experienced than would be in a normal delivery. It is worthy of note to say that it is not believed the bond of union here would have been capable of much elas-

* Presented to the Staff of the Ohio Valley General Hospital.

ticity had other complications of position been existent. The well-known example of Siamese twins came into being with one delivered breech and the other headfirst.

FIG. 2.—X-ray picture of so-called Siamese twins.

Speculation arises in regard to the probable presence of dystocia in this case, and, while it would harbor nothing new or novel, it is only when such a monster is born that we are inclined to ruminate over such a perplexity, and therefore it is not amiss. Would this example of a monster have permitted the attendant to do a version on the second child, had the first been exposed headfirst and labor ceased (supposing it had gone on to full term), or could he have brought the second head up into the groove of the neck and so induced labor to resume? Again, would it have been possible to do the double version here, which is urged as the best way of delivering such monsters when labor ceases with both heads offering resistance to expulsion?

The question of amputation of limbs, removal of the contents of the abdomen or skull, offers fine distinction in these situations for the display of technical knowledge, and although the double monster is, strange to say, usually spontaneous in its expulsion (being, as a rule, premature), and offers little to be concerned over, when they do offer dystocia they are inclined to give considerable trouble and anxiety to the attendant.

Cesarean section has been done for them. This seems extremely unwise. Version or severing the tie that binds would appear more judicious, and, in the last decision, destruction if necessary.

The umbilical cord appears to be single, but, upon separation, it was found that two separate cords were existent up to the point of entrance into the fused segment of the monster.

THYMOMA *

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O. McI., male, noticed illness on July 20, 1929, which was thought to be neuritis, located in the right shoulder. Suddenly he became dyspneic; transition from comparative comfort to extreme breathlessness was striking. Considering character of tumor, the conclusion might be drawn that the approach to pronounced dyspnea would be gradual. A surgeon later withdrew a quart of bloody fluid. Progression was rapid and pulmonary ventilation was accomplished with great difficulty. He was ordered into the hospital.

Past history was negative, except for influenza in 1918. He had done heavy, laborious work right up until July, and some work several weeks later. Speculating on the ramifications of the mass, this seems well-nigh improbable.

Physical examination revealed expansion on right side all but absent. There was a barrel effect to the chest, with interspaces bulging. The heart was markedly displaced to the left. A provisional diagnosis of pleurisy with bloody effusion was made.

On September 10, x-ray showed a large quantity of fluid in the right chest cavity, which obscured all but a portion of the lung shadow at the apex. The heart was pushed mechanically to the left. On September 16, the lung shadow was still further reduced, almost to the vanishing point.

September 11, aspiration of the chest was made under local anesthesia, using a small needle, with slow withdrawal. The patient withstood the procedure poorly, with attacks of coughing, cardiac irregularity, pronounced dyspnea, and near syncope which was averted by the use of stimulants. Two quarts of bloody fluid were removed. When returned to bed, the patient was considerably more comfortable.

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* Presented to the Staff of the Ohio Valley General Hospital.

Aspiration was repeated on September 17, under the same handicaps. Three pints of bloody fluid were removed and relief was again experienced.

On September 25 it became apparent that the secretory mechanism was exhibiting an inflow that was superior to any aspirating technique, and that, unless something was done, suffocation was imminent. The patient absolutely refused to submit to

FIG. 1.—Thymoma, shortly after two quarts of bloody fluid had been aspirated. Note size of tumor in mediasternum.

another withdrawal by the local method. Relief was, therefore, a point of some delicacy. Since morphine gave little or no relief (the condition being mechanical), having some contraindications as to respiratory depression and making him assume a position which increased dyspnea, it became obligatory to face a trying problem of relief. Emphasis is laid on this feature because it assumed a prominence equal to treatment itself. What shall be done in such a case? The almost hopeless prognosis is apparent. Suffocation is equally sensed. The family and the patient are told the situation. Man cries out for relief. Nitrous oxid gas, most carefully controlled, is decided upon for the third aspiration and biopsy. It is approached with every precaution and with absolute provision as to consultation and assistance. Several inhalations are well borne. The patient has to assume a somewhat awkward position, moves slightly, goes into collapse, and death comes quickly.

While, to some, the gas may have seemed the cause of death, it has appeared more likely that the change in position, considering the findings later, was the direct factor in the fatal ending. While a result such as this may be assumed to be a great blessing as compared with one of suffocation and asphyxiation just around the corner, it is, to say the least, rather unfair and unjust to both anesthetist and operator. Perhaps a termination in bed, with morphine pushed despite its drawbacks, is the more acceptable way. That will ever be a debatable point. The ante-mortem diagnosis was "malignancy in mediastinum." No hazard was made as to character. Diagnosis was largely based upon bloody fluid.

Post-mortem diagnosis: Thymoma.

Laboratory findings were exceptional: White blood cells 33,850; differential polynuclears 29%; lymphocytes 66%; red blood cells 4,184,000. Complement fixation was negative. Smear and stain of sediment was negative except for a faded-out cell, the identity of which was not established.

No glandular enlargement was made out during the course of the disease until suddenly, and with startling rapidity, pronounced enlargement of all the

FIG. 2.—Photograph of tumor.

glands throughout the body made its appearance less than forty-eight hours before the patient's death. A biopsy of one of these glands was contemplated when death intervened.

The rarity of the neoplasm and the fact that he worked while it assumed mammoth proportions, with little or no discomfort; the extreme rapidity with which the drama of decompensation finally pro-

gressed; the failure to find any aspiration technique which could prove superior to the inflow; the ethical problems concerned in the patient's relief, and his termination in a final attempt to draw an adequate amount of fluid, makes the case one of more than passing interest.

Synopsis of Pathological Report.—The outstanding gross picture was limited to the thoracic cavity. Upon exposure of the cavity, a mass in the midline, adherent to the sternum, presented itself. The growth was rectangular in shape, averaging 13 cm. in width, and extended from the sternal notch to the superior surface of the diaphragm. The tissue was firm in consistency and, on section, the surface was a grayish-white in color with scattered soft, yellowish areas. The picture was typical of a thymic tumor. The latter not only occupied the entire mediastinum, but involved the diaphragm and the parietal pleuræ in both cavities. The diaphragm and pleura were markedly thickened, averaging 3 mm. to 1 cm. in thickness. The trachea and esophagus were surrounded and compressed by the tumor. The roots of the lungs were involved with invasion of the lung tissue. Superiorly, the tumor surrounded the branches of the arch of the aorta. There was a pleural effusion on the right side with 500 c.c. of a blood-tinged fluid. The pericardial cavity was completely enclosed in the mass, although grossly there was no evidence of extension into the cavity itself. The inferior vena cava was surrounded and compressed by the tumor.

The cervical lymph nodes on the left side and the gastric-hepatic lymph nodes showed gross evidence of involvement. The liver and kidneys showed metastases.

The microscopic examination showed a tumor growth composed, for the most part, of medium-sized cells, usually round or oval with vesicular nuclei. The latter occupied the greater part of the cells; sometimes only a small bit of pink cytoplasm could be seen. There were a moderate number of atypical mitotic figures. Occasionally there were large polyhedral cells with pale vesicular nuclei and often vacuoles in the pink cytoplasm. Sometimes there were giant cells with several pale nuclei. A few of these cells show concentrically arranged nuclei, pale-staining and crescent-shaped. In some instances atypical thymic corpuscles were seen, these apparently being composed of the large type of cell. There were also occasional large cells with pink cytoplasm filled with numerous eosinophilic granules and a large vesicular nuclei with prominent nucleoli. The small lymphocytes were few in number. There was a marked fibrosis with occasional areas of necrosis, although the tumor was fairly vascular. Sections of the myocardium, lungs, liver, kidneys, and spleen showed tumor metastases.

From the gross and microscopic appearance the tumor has all the characteristics of a thymoma.

SARCOMA OF THE UTERUS

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and
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Mrs. M., white, female, age 48, was admitted to Charleston General Hospital on September 9, 1929, with the complaint of menorrhagia dating from August 16, 1929.

Present illness: The patient had passed through the menopause about twelve months prior to admission to hospital. She had very slight flow in November, 1928, at which time there began a rather sudden, painless hemorrhage from the vagina, which lasted about six days. The patient became quite weak, and up to the time of admission the weakness had become progressively worse. There had been some loss of weight, the exact amount not being known.

Past history: The patient had the usual childhood diseases, with good recovery. Had typhoid fever and diphtheria as a child, with good recovery. At birth of second child, twenty-five years ago, she suffered from puerperal fever, and since this time she has never been strong. There is history of very frequent sore throats as a child. During recent years there has been swelling of the ankles when patient stands for any length of time on her feet.

System's history: Essentially negative.

Family history: Patient's grandparents on mother's side died of tuberculosis. Father alive and well. Mother died of heart trouble in old age. No history of cancer, kidney disease, or diabetes in family.

Menstrual and puerperal history: Menstrual periods began at age of sixteen years, were regular, coming every three weeks; the flow would be small in amount.

The patient has had seven children. No still births or miscarriages.

On physical examination the complexion of the patient was sallow; she looked somewhat cachetic. Other than this, the physical examination was negative, with the exception of the pelvic examination, which revealed a second-degree laceration of the

perineum, moderate hypertrophy and laceration of the cervix. The cervix was freely movable. The uterus was retroverted and enlarged. No masses could be felt in the broad ligament.

Diagnosis of uterine hemorrhage, probably due to early carcinoma, was made.

Laboratory report showed urine negative; red blood cells 4,000,000; hemoglobin 70%; white blood cells 6,000; differential count, polymorphonuclears 60%, small lymphocytes 36%, lymphocytes 4%.

Immediate operation was advised, but the patient refused operation and was transferred to Dr. Thornhill on September 10, 1929, for radium treatment. Dr. Thornhill advised the patient to reconsider operation, and she was transferred back to Dr. Buford's service the same day.

On September 11, 1929, total abdominal hysterectomy, bilateral oöphorectomy, and salpingectomy was done. At operation, inspection of the uterus showed it to be enlarged; there was diffuse fibrosis with polypoid hypertrophy and hyperplasia of the endometrium. The cervix was lacerated, infected, and ulcerated. The ovaries were sclerotic.

Pathologist's report on specimen was as follows: "Gross appearance; uterus about three times normal size, uniformly enlarged. Endometrium thickened and polypoid. In section, uterus is white in color and striated. On cervical portion there is a small cyst which contains yellow fluid. Microscopic examination: Sections show a highly cellular tumor scattered uniformly throughout the tissue. Few mitotic figures. The elongated spindle cells are arranged in bundles and whorls. There are numerous thin-walled vessels. Mucoid degeneration of cervical portion. Diagnosis of fibroid sarcoma was made."

After operation the patient received the usual post-operative care and made an uneventful recovery after a somewhat stormy time the first three post-operative days. The wound healed by first intention and the patient was discharged from the hospital on September 25, 1929, in good condition.

Sarcoma of the uterus, which was given a definite place in pathology by Virchow in 1865, is one of the rare pathological conditions of the uterus whose clinical differentiation from cancer of the uterus is almost entirely in the hands of the pathologist. Even with a microscope it is often with difficulty that it can be differentiated from myxomatous change in fibroids of the uterus which so often occurs.

Sarcoma of the uterus occurs most frequently in the age just following the menopause, the high age incidence being between forty-five and fifty, though cases have been reported at all ages—even in children of five years or less. Sarcoma occurring principally in the age period noted above, and having the same clinical manifestations of cancer (that is, in early stages, leukorrhea, hemorrhage followed by pain), makes differentiation in these two conditions almost impossible. However, considering the fact that the ratio incidence of sarcoma to carcinoma is given as one to forty, one is not apt to be wrong in making a diagnosis of a malignancy of the uterus as carcinoma from clinical manifestations alone.

As to classification, sarcomas of the uterus may be placed in two groups: corporeal (or sarcoma of the body of the uterus), and cervical. Hegar has divided these two classes into the following divisions:

I. Sarcoma of the body:
   1. Parenchymatous sarcoma.
      (*a*) Arising from the muscular wall: diffuse, circumscribed.
      (*b*) Arising in a previously existing myoma.
   2. Sarcoma of the endometrium.
      (*a*) Diffuse.
      (*b*) Circumscribed.

II. Sarcoma of the cervix.
   1. Parenchymatous.
   2. Mucosal.

The majority of all sarcoma are corporeal, only twelve per cent arising from the cervix. At one time it was contended that all sarcoma arose as a result of sarcomatous change in previously existing myoma. This view was in fact held by Virchow and others, but it has since been proved that sarcoma, though it is frequently the result of sarcomatous degeneration in a fibroid, may arise from the parenchymatous tissue of the uterus *per se*, and, like myoma, may be of the interstitial, submucous or subserous variety.

Of the parenchymatous type of sarcoma, the infiltrating variety is found very rarely, only twelve cases having been reported. The circumscribed type, the most common of parenchymatous sarcoma, resembles closely myoma of the uterus, being circumscribed in the early stages; but later the cells tend to break through their barriers and invade the surrounding tissues. It is this type of tumor that gives rise to recurrent polypi seen quite frequently and which often offers a perplexing diagnostic problem, these tumors often being pronounced histologically as myxomatous growths. In regard to sarcoma of the endometrium, this condition occurs much less frequently than the parenchymatous type.

It spreads uniformly throughout the entire mucosa of the uterus, causing it to enlarge and simulate a gravid state.

Cervical sarcoma can be dismissed with the statement that, to date, only twenty cases have been reported in the literature.

Grossly, sarcoma is often readily differentiated from myoma by the fact that the cut surface is homogeneous and not whorled, the malignancy having a yellowish color and being soft in consistency, and there may be cystic formations. When sarcomatous change has occurred in a myoma, it is usually in the central area. The microscopical appearance of these tumors can be left in the hands of the pathologist. Suffice it to say that these tumors occur in the three common types: spindle-cell, round-cell, and mixed-cell types. The round-cell type is the most common and the most malignant.

As regards clinical features, sarcoma of the uterus may be a very quiescent type of tumor growing slowly over a period of years, when suddenly it may take new life, spread rapidly, and metastasize by the blood and lymph streams to various parts of the body. This metastasis occurs, as a rule, much later in sarcoma than in carcinoma. In fact, most recurrences of this condition are in the uterus or regional, and secondary metastasis is quite rare. For this reason, the prognosis of sarcoma of the uterus is much better than that of carcinoma, especially if removed early. Also, sarcoma has a tendency to spread uniformly, causing an enlargement which in many cases resembles the gravid uterus, which is not true of carcinoma. The growth is somewhat soft in consistency and may even become cystic; this is likewise a different manifestation than that of carcinoma. These are the chief clinical differences in the two types of tumors.

Symptoms of sarcoma may be divided into th triad: hemorrhage, leukorrhea, or rice-water discharge, and, as a late symptom, pain. To these may be added cachexia and loss of weight. The hemorrhage may be slight or profuse, followed in time by a "rice-water" discharge, often containing particles of the tumor. When the tumor has become subserous, adhesive peritonitis results, bringing on the late symptom pain. These symptoms are similar to those of carcinoma; hence the difficulty of differentiating these two types of malignancy on clinical symptoms alone.

The diagnosis of sarcoma is most difficult at best; often impossible. It must be borne in mind that whenever a myoma tends to show degeneration after the menopause, sarcoma should be suspected; also, if ascites develops in a case of myoma with resulting cachexia and loss of weight, malignancy should be considered. It must likewise be borne in mind that senile endometritis with pus retention may simulate a degenerating sarcoma. All growths removed from the uterus should be viewed with suspicion and a histological study made, for it is the microscope that establishes the identity of whatever tumor or particle of tumor that may be removed from the uterus.

The prognosis in rapidly growing sarcoma is grave. In the circumscribed or slowly growing type it is considered good, but must be determined by the cell type. The treatment is, in operable cases, removal of the uterus and appendages. This may be followed by deep x-ray or radium. Inoperable cases may have life prolonged by the use of x-ray and radium; but here the result is inevitable, death ensuing in a few months or a few years.

TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association.

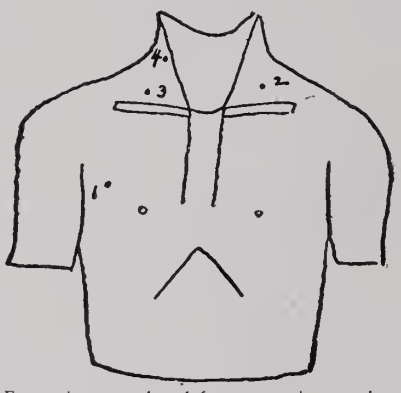
Procedure in Examination of the Lungs

In making a physical examination of the chest, the general practitioner should be able to arrive at a correct diagnosis or conclusion in nine-tenths of the cases. Yet it is common experience that many cases of tuberculosis remain undiagnosed long after that should have been possible by the means now at our command. This unfortunate situation is due largely to the unsatisfactory method of teaching physical examination technique to the medical student and to the far too complicated treatment of the subject in our textbooks. Such is the opinion of James Alexander Miller, who, in the foreword to *Procedure in Examination of the Lungs*, by Arthur F. Kraetzer, commends this little book as a "real contribution in simplifying the methods involved." Brief abstracts from the book follow:

Conventional teaching of physical diagnosis is deductive. It starts with general principles and works down to the specific. Actual examination of a patient is inductive. It begins with the gathering of particular findings and then works upward to an inductive conclusion. Of course, the student must visualize the entire field of possibilities; he must have a descriptive knowledge of disease, but the development of a good examination technique is best acquired by the inductive method. The author follows this plan in his book, reproducing the actual steps taken in the clinic to gather the facts of an indi-

vidual case and to deduce therefrom the causative condition or pathology. Chest diagrams amplify the text.

He says: "Nothing in medicine is worse done than the early diagnosis of tuberculosis, and one of the factors that contributes to this is, I am sure, the unnaturalness and obscurity of early training. Not only the method, but also the matter, is vague. Nothing could be more confused, for example, than the classical and utterly obsolete classification of râles. The terms *crepitant* and *subcrepitant* are entirely ambiguous. They have no place in modern terminology."



Four points are selected for comparative practice.

Systematic Practice Necessary.—In learning to distinguish the characteristics of chest sounds as revealed by percussion and auscultation, it is well to practice leisurely and patiently on a willing, normal subject. Four topographical points are selected for comparison in the following order.

1. A point rather low in the right axilla (gastric tympany and heart sounds on the left may cause confusion).
2. The left supraclavicular region.
3. The right supraclavicular region.
4. The side of the neck.

In percussion, the resonance or duration of sound is easily detected by asking, "Which sound lasts longer?" Determining the pitch of the percussion note is somewhat more difficult, especially for ears not delicately attuned. However, unmusical ears can learn to detect differences by trying to "sing" the sound elicited. The student should also remember that the duller of two notes is always the higher pitched. When the differences in resonance in the four points selected are distinguishable to the student, he begins to hear more subtle shadings.

In auscultation, the four selected points are compared for (*a*) intensity or, rather, loudness (one does not have to be a Laennec to determine that); (*b*) length of respiratory sound (which is quite as easy); (*c*) pitch of respiratory sound, being careful not to mistake intensity for higher pitch (since loud sounds and those of high pitch are more readily heard than less-loud sounds and those of less low pitch, it is easy to fall into the error of concluding that a loud sound is of high pitch, whereas it may actually be lower pitched); (*d*) the quality of breath sounds, such as that like the gentle rustle of microscopic leaves (vesicular) as heard well at point one, and at the other extreme the hollow tracheal sound as heard at point four. When the several differences and combinations of these qualities are mastered, the student learns to "synthesize" them in terms of the physiological and anatomical structures that give the sounds their characteristics.

With this preliminary mastery of the sounds of the four selected points of the normal chest, the student is next introduced to the study of the entire chest. Inspection comes first; in addition to general appearance, there are certain conditions which must be specifically looked for, such as the position of the trachea, the pitch of the chest, and clubbing of fingers. Then follows palpation, which includes tactile fremitus. Percussion is next pursued systematically and always by comparing one side of the chest with the other.

Râles and Their Meaning.—The four succeeding chapters are devoted to auscultation, including one exclusively on râles. The author deplores the "strained effort to endow a particular râle with a specific and invariable significance," which has caused so much confusion in diagnosis. The most general and, at the same time, accurate statement he is willing to make about râles is that they represent either inflammation or transudation, which includes "about all that can happen to a lung." To interpret the meaning of *râles*, he recommends the following three criteria, namely: the consideration of:

1. All the data that have gone before under symptoms, inspection, palpation, percussion, and changes in breath sounds.

2. The geography of the râles; whether at the top, hilum, base, or some intermediate and unclassifiable area of the lung; whether unilateral or bilateral; whether localized or generalized; whether few or many.

3. The actual type of râle itself, whether dry, moist (fine, medium or large), sibilant or sonorous.

A fourth and often essential criterion is the x-ray. These criteria are carefully elaborated and described.

"Signs" of Tuberculosis.—Chapter XI, on "The Signs of Tuberculosis," bears as a subheading the scriptural quotation, "A wicked and adulterous generation seeketh after a sign, and there shall no sign be given unto it." This sentence, he says, is highly applicable to the diagnosis of tuberculosis. A positive sputum is the only sure sign of tuberculosis, but finding tubercle bacilli in the sputum is not diagnosing tuberculosis in the modern sense of discovering the process in its early stages and in the minimum of time. Tuberculosis is diagnosed by a skilled technique plus a peculiar synthetic discipline of the mind. This harmonizes with the observation of Miller, who, in the foreword, says: "Physical signs are by no means always the most important evidence in making a diagnosis of pulmonary tuberculosis. In many, if not the majority of cases, the diagnosis should be suspected at least, if not really made, from the history alone, and in so many cases does it occur that physical signs are very scanty o absent or perhaps not pathognomonic, that if a student or physician acquires the habit of relying upon physical signs for diagnosis, many mistakes will result."

Sources of Childhood Tuberculosis

Protecting children from the germs of tuberculosis requires constant vigilance on the part of parents, Dr. J. A. Myers observes in the November *Hygeia.*

Dr. Myers first calls attention to the danger of unsuspected tuberculosis in close associates of the infant. Many such cases have been brought to light as a result of the deaths of infants from tuberculosis. This is a strong argument for periodic health examinations of apparently healthy persons. No person would willingly infect children with tuberculosis, but, unknowingly or because of neglect of their own conditions, this is constantly being done.

A tremendous amount of tuberculosis in infants and children has been caused by contaminated milk from tuberculous cows. This has been greatly reduced by pasteurization, but it has not been entirely eliminated because public health education has not been able to reach or to convince every one.

The air that a child breathes may become contaminated through the talking, coughing or sneezing of a tuberculous patient. Promiscuous spitting is a serious source of danger to children. Animal pets not properly cared for may carry germs into the child's home. Foods may be contaminated through handling by persons with tuberculosis, and are an important means of spreading the disease during infancy.

The Story of Anesthesia

Anesthesia has removed the terrors from surgical operations to such a point that it is difficult for us, who have been born into a world in which surgical pain has been conquered, to comprehend the conditions that existed before its advent, less than 100 years ago, observes Dr. John H. Evans in "The Story of Anesthesia," in *Hygeia* for November.

The words *anesthetic* and *anesthesia* were coined by Dr. Oliver Wendell Holmes, poet and physician. For the discovery of this means of eliminating surgical pain we are indebted chiefly to three men. Dr. Crawford W. Long, of Athens, Ga., discovered in 1842 that the inhalation of ether would eliminate the pain of surgical operation; but he was a busy doctor and did not announce his discovery until seven years later, after others had laid claim to the discovery.

In 1844 a dentist, Horace Wells, of Hartford, Conn., discovered the anesthetic property of nitrous oxide, or laughing gas. This is the most pleasant anesthetic known today. Its odor is not disagreeable, consciousness is lost quickly and regained quickly, and the after-effects are less than with any other anesthetic.

Two years later still, William T. G. Morton, a medical student at Harvard, discovered the use of ether as an anesthetic independently. He gave a public demonstration at the Massachusetts General Hospital and within a year ether was used in all the large hospitals in the world.

Analgesia is a slight form of anesthesia in which the body or some part of it is insensible to pain but consciousness is not lost. It may be induced locally or by a general anesthetic.

Dr. Evans emphasizes in his article the fact that the importance of the administration of anesthetics has been only gradually realized. For many years the most recent and usually the least qualified interne, the clinic orderly or any bystander who was not engaged at the moment was called on to give the anesthetic for an operation. It has now become apparent that a qualified and experienced anesthetist can be instrumental in reducing the post-operative death rate. The surgeon, relieved of the necessity of superintending the anesthetic, may now give his entire attention to the operation. This teamwork between the surgeon and the anesthetist results in a higher percentage of recoveries, and the old-time comment that "the operation was successful but the patient died" is less frequently heard, Dr. Evans says.

THE WEST VIRGINIA MEDICAL JOURNAL

JAMES R. BLOSS, EDITOR-IN-CHIEF . . HUNTINGTON

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¶ Our readers are requested to send marked copies of local newspapers containing matters of interest to members of the medical profession. Name of sender should be given.

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PRESIDENT'S PAGE

THE idea of a permanent home for the State Association has long been a dream of many of the loyal members, but thus far the project has been an ideal rather than an aim. However, it would seem now that within a few short years we may be able to realize this goal. At any rate, it is worth while to plan.

A committee to consider ways and means has given much careful thought to the subject, and especially has the chairman labored enthusiastically and well.

The McDowell County Medical Society has set a worthy example by contributing ten per cent of its annual surplus to a fund for the erection of a permanent State Association Home. McDowell's example is worthy of emulation, and we would recommend to all the local societies that, at the close of the current year, they do likewise. Also, the individual members should ponder the subject, and any recommendations Dr. Black, as chairman, and his committee make at the Clarksburg meeting should be given careful consideration by the House of Delegates.

Let's make a permanent home an objective to be attained within the near future.

Walter E. Vest

President.

EDITORIAL

Vote for the Man

This issue of the JOURNAL will reach you almost on the eve of the November election. Within the next day or two you will go to the polls and cast your ballot for the legislative and state senatorial candidates in your district. For the welfare of medical practice in West Virginia, we ask that you disregard party lines in voting for legislative candidates, and vote for the man or men who will support the medical practice act of this state. If you don't know how your candidate stands on this matter, you still have a few days to find out. It is most important that you do find out before the election, so you can vote intelligently for the candidates who will preserve the standards of your chosen profession.

It might be interesting to point out that the medical practice act of West Virginia is recognized as one of the best in America. It might also be interesting to point out that the rates for malpractice insurance in West Virginia are equal to the lowest rates charged anywhere in the United States. The two above statements go hand in hand. If we are to preserve our medical practice act, and if we are to continue to enjoy the stabilizing influence it has on medical practice, then we must vote for legislative candidates who will resist any and all attempts to lower the standards for the practice of medicine in this state.

There will be many legislative bills introduced next January that will attempt to break down our medical practice act. There will be a bill to license faith healers and allow faith healers to charge a fee for their alleged services. There will be a bill to eliminate the academic requirements of the various cults. There will be a bill that will make it possible for a third-year medical student to become licensed to practice in this state. There will be many other measures aimed at our medical practice act, and all of these measures must be defeated if we are to maintain our present high standards for the practice of medicine.

Let us see what would happen if the legislative measures mentioned above were enacted into law:

First, every person in this state, if so inclined, could maintain an office and practice medicine under the guise of a faith healer.

Second, West Virginia would lose her reciprocal relations with most of the other 47 states in the Union.

Third, West Virginia would become a national dumping ground for graduates of diploma mills and cult colleges who are already excluded from all but two or three states.

Fourth, the medical profession, through the influx of cultists and quacks and charlatans, would receive the lion's share of the blame and criticism for the deterioration of medical service which would inevitably follow.

If your legislative candidate wants to know what the medical profession is for, tell him we are for maintaining the present high standards for the practice of medicine in this state. If he wants to know what the medical profession is against, tell him we are against any and all measures that attempt to lower that standard.

Medical Economics in West Virginia

Elsewhere in this issue of the JOURNAL will be found the complete results of the survey recently conducted by the Association to determine the exact status of medical economics in West Virginia. To secure the desired information, a questionnaire was sent to every member of the West Virginia State Medical Association with a stamped and self-addressed envelope enclosed. It was most encouraging to find that more than 75 per cent of the questionnaires were returned. The results, while not altogether startling, were at least highly interesting.

The average incomes and the average charity contributions and percentages of collection are mathematically correct. It will be interesting to note that the average income of the general practitioner is slightly larger than the average income of the "contract" doctor. It will also be interesting to note the difference between the average incomes of the rural and urban general practitioners; the differences between the average incomes of the various specialties.

The remaining statistics in the survey were determined by the use of percentages. The number of questionnaires returned was found to be a certain percentage of the total number of practicing physicians in West Virginia. After this percentage was determined, then the figures disclosed by the survey were multiplied by the percentage to arrive at the various totals. While these totals are not mathematically correct, they are unquestionably of great value. It could almost be said that these totals are as nearly correct as it is humanly possible to get them.

As far as it is known, this is the first survey of its kind ever made in West Virginia and one of the first of its kind ever made in the United States. Approximately three months were required to prepare the

questionnaire, get it ready for mailing, and to correlate the returns. This work was done with the utmost care and precision, and the returned questionnaires are being preserved in the files of the Association. A limited number of reprints will be made from the survey report and will be available, upon request, to members of the Association.

Southern Medical Meeting

The twenty-fourth annual meeting of the Southern Medical Association will be held in Louisville, Kentucky, from November 11 to November 14, 1930. As there are many West Virginia doctors who are members of the Southern Medical Association and who expect to make the Louisville trip, we publish herewith the editorial concerning the meeting that appeared in the October issue of the *Southern Medical Journal*:

THE LOUISVILLE MEETING

One of the best meetings in the history of the Southern Medical Association was in Louisville, Kentucky, in 1920. Now, after a lapse of ten years, the Jefferson County Medical Society, Louisville, is again host to the Southern Medical Association. Louisville is said to be "at the crossroads of the nation," accessible to, and easily reached from, all points in the south as well as in the eastern, central, and western states. Louisville is a great medical center, having early in the nation's history taken its place as a seat of medical learning. There have gone out to the south from the medical schools of Louisville, now all merged into the School of Medicine, University of Louisville, perhaps more graduates than from any other medical center.

The program arrangement of the last several previous meetings, which has proved satisfactory to all, will be followed again this year. Tuesday and Wednesday, November 11 and 12, will be general clinical days, the program the first day being made up by members of the Louisville profession and the second day by physicians from outside the host city.

The opening clinics have been particularly well planned by physicians with the best facilities to bring out the newer methods of diagnosis and therapy. Guests who arrive in time for the first of the Louisville clinics will feel amply repaid for their effort. For the clinics of the second day, the speakers will be brought together from the entire southern territory and from more northern and western points as well. The strictly clinical plan of presentation of patients and analysis of symptoms will be followed as far as possible. The wealth of clinical material in and near Louisville will furnish a varied background for elucidation of the essayists' ideas and methods.

The scientific exhibits from year to year have shown increasing variety and merit. The technical exhibits this year are exceedingly full and varied. Careful inspection of their materials will show how faithfully and how quickly the supply houses respond to changing needs of the medical profession, and how frequently they may be leaders in improvement of technical methods.

The formal opening session, with the addresses of welcome and response, featuring the address of the president, Dr. Hugh S. Cumming, surgeon general, U. S. Public Health Service, will be held on Tuesday evening. The last general session will be on Thursday evening, featuring the oration on surgery and oration on medicine, both presented by men of national reputation.

Wednesday evening has been set aside for alumni reunion dinners. Dinners will be arranged for all the schools having a sufficient number present to justify an individual dinner. The University of Louisville will make this a "home-coming" occasion, and expects to have hundreds of former Louisville graduates at its reunion and dinner.

The eighteen sections and conjoint meetings will hold their sessions on Thursday and Friday, meeting as usual in half-day sessions. The National Malaria Committee and the Southern Association of Anesthetists will meet conjointly with the Southern Medical Association, as has been their usual custom, both presenting strong programs. The general session programs and the section programs are unusually strong this year. The section programs reflect the interests, inclinations, and educational needs of their officers, men in active practice throughout the southern territory. From a scientific point of view, the Louisville meeting will be another outstanding success in the already illustrious history of the Association.

While the Southern Medical Association is strictly a scientific organization and its annual meetings are to stress things scientific, the social features are not omitted. There will be a president's grand reception and grand ball with Armistice Day setting on Tuesday evening, following the president's reception. There will be other social functions, with special entertainment for the visiting ladies. Louisville has one of the most active local women's auxiliaries in the United States, and its members plan to give the visiting ladies a royal good time. Mrs. George A. Hendon is general chairman for ladies' entertainment, and Mrs. John K. Freeman is president of the local auxiliary.

There will be the usual golf tournaments for men and for the ladies, and also the trapshooting tournament, there being permanent trophies to be contested for by both these groups.

Reduced round-trip railroad rates are in effect from all points in the south as well as from eastern, central, and western states. Louisville is a railroad center, reached by through sleepers from all parts of the country. A special train, known as the "President's Special," will operate via C. & O. from Washington, D. C., and Richmond, Virginia, leaving both cities Monday afternoon, consolidating at Charlottesville, and arriving in Louisville Tuesday morning. It is anticipated that the physicians and their families from the eastern territory of the Association will travel with the president on this special train.

Kentucky has splendid hard-surfaced roads connecting with main trunk-line roads from all states. Much of historic and scenic Kentucky can be seen in motoring.

Louisville has modern hotels, and all who wish to attend will be comfortably housed.

OBITUARY

Dr. Philip Henry Killey

Dr. Philip Henry Killey, of Vivian, McDowell county, an honorary member of the West Virginia State Medical Association and one of the oldest members on the Association's roster, died at his home on the morning of September 2, 1930, following an illness of several months. Funeral services were conducted at the Grace Episcopal Church at Eckman at 9:30 o'clock on the morning of September 2 and interment was made that afternoon at Peterstown. The pallbearers were grandsons and nephews of the deceased.

Dr. Killey was the son of James and Eleanor Crellin Killey, and was born at St. Johns on the Isle of Man on February 11, 1849. At the age of four years, with an older brother, he was brought to the United States by his mother to join their husband and father, who had settled in Mercer county. Near Richmond, Mrs. Killey was accidentally drowned in the James River when a small boat capsized. She was *en route* to Fredericksburg to take a stage for Mercer county at the time. The two small boys were rescued and Dr. Killey was reared by the late Ralph Hale of Glen Lyn, Virginia. Mr. Hale became the lad's foster father and bestowed upon him all the blessings that a parent could give a son.

Dr. Killey was educated at Roanoke College and in 1872 was graduated from the Medical College of Virginia at Richmond. Following his graduation he practiced his profession at Pearisburg, and in 1892 located at Vivian, where he remained until his death and where he followed his profession until his failing health forced his retirement.

In 1876 he was married to Miss Eliza Byrnside Clark, daughter of Mr. and Mrs. L. F. Clark of Peterstown, who died in 1908. To this union eight children were born, three sons and five daughters, seven of whom survive. They are: Dr. J. C. Killey of Vivian, D. L. Killey of Columbus, Ohio, R. M. Killey of Reed City, Michigan, Mrs. R. B. Williamson, Mrs. James O'Keefe, and Miss Ethel Killey, of Bluefield, and Mrs. W. G. Williamson of Vivian. Dr. Killey is also survived by a number of grandchildren and other relatives.

As an infant Dr. Killey was christened a member of the English Protestant Reform Church. He had been treasurer and senior warden of Grace Episcopal Church at Eckman since its organization. He was made surgeon of the Norfolk and Western Railroad at the time the Pocahontas division was being constructed in 1885, and he served as president of the Norfolk and Western Surgeons' Association in 1907. He was also a past president of the McDowell County Medical Society and a member of the West Virginia and American Medical associations.

Dr. Killey was a loyal and devoted member of the Masonic fraternity and was largely instrumental in the organization of the Vivian Masonic Lodge. He was a Knight Templar, a member of Howard Chapter of Northfork Ivanhoe Commandery of Bramwell, and of Beni-Kedem Shrine in Charleston. He was the first worshipful master of Vivian Masonic Lodge, and in June of this year was again elected to that office.

The sound judgment and understanding of Dr. Killey marked him as an outstanding character, both as a professional man and as a private citizen. His pleasing address and affable manner easily won him friends, and he was held in the highest admiration and esteem throughout McDowell county. As a tribute to the high integrity and character of Dr. Killey, we publish herewith the following editorial that appeared shortly after Dr. Killey's death in the Bluefield *Sunset News*:

"Eighty-one years is a long time to live. It seems much longer to younger people than it does to those

who have attained such longevity. But, after all, the length of any life is of much less importance than the way it is lived. Some people have outlived their usefulness before they have passed half the allotted span of three score years and ten, while others reach the four-score mark with little indication of any lessening of their usefulness to their fellowmen. The late Dr. P. H. Killey, of Vivian, was in this latter class. Those who had known him during the approximately forty years he had been among the civic and professional leaders of Pocahontas coal-field territory, where he had done so much to alleviate suffering and to work for the general uplift almost from the time development of the field first began, can never bring themselves to think of Dr. Killey as an old man. For, though he was more than a decade past the allotted span of life, it was only in years that he was old. He was always young in spirit, and to the very day of his death literally radiated good cheer and exercised an influence among the wide circle of his acquaintances that will continue to live and make for better living by others long after his bones have become dust.

"Beginning the practice of his profession at Pearisburg, Va., nearly a half-century ago, it was not long until he became the leading doctor of that community, and soon after coming to the coal field, 38 years ago, he became one of the leading physicians and surgeons of southern West Virginia. He kept abreast of all the marvelous advances in medicine and surgery ever after, and even at the age of four score years still held his rank as one of the community's leading doctors. He was that type which is fast vanishing from the scene and whose passing is so widely regretted. He was much more than a family doctor, though. He was also a family friend and adviser in all the problems of life, and there are thousands throughout this community who have profited by his sound advice in matters of business, religion and right living no less than they profited by his medical and surgical skill.

"The story of his life as published in Tuesday's papers reads like romance. It is not lacking in tragedy, but no amount of sorrow was ever able to kill his splendid spirit of optimism, nor to lessen his effort to be of the utmost service to his fellowman. He was one of whom it can truly be said: 'The world is the better for his having lived in it.'

"No life lived as his was is ever too long, no matter how great may be the length of years. It was the testimony of those who knew him best that 'he went about doing good.' It is idle to attempt to add anything to such a eulogy, except to say that we are firmly convinced that it was richly deserved.

"Peace to his ashes! Memory of good deeds done in the flesh is the rich heritage he leaves to his loved ones. And no more enduring monument could be erected."

Manuel Justo, M.D.

Dr. Manuel Justo, of Welch, 36 years of age, died at the St. Luke's Hospital, Bluefield, on the afternoon of October 20, 1930, from cancer of the lung. He became ill last April, shortly after assuming his duties as chief surgeon of the Steven's Clinic Hospital at Welch, and was forced to retire from practice last June. Since that time Dr. Justo had made an ineffectual search for health in several states. Funeral services were held on the morning of October 22 at the Sacred Heart Church in Welch and interment was made in Monte Vista Park cemetery there.

Dr. Justo was graduated from the Johns Hopkins School of Medicine at Baltimore in 1923 and served his interneship at the St. Agnes Hospital there. He came to West Virginia and received his license to practice in this state in 1929. The same year he became a member of the McDowell County Medical Society and the West Virginia State Medical Association. He was held in the highest regard by his associates in McDowell and Mercer counties, and was one of the most promising young surgeons in that part of the state.

Charles Walker Albert, M.D.

Dr. Charles Walker Albert, of Charleston, died suddenly at a Charleston hospital on October 3, 1930, following a stroke of paralysis suffered on the preceding day. Dr. Albert was 58 years of age and had practiced medicine in West Virginia since 1899. He had practiced in Charleston for several years prior to his death, having been interested in eye, ear, nose and throat work.

Before coming to Charleston, Dr. Albert was located in Parkersburg and was a member of the Parkersburg Academy of Medicine for about twenty years. Funeral services were held at his home in Parkersburg on October 6 and he was buried there. Dr. Albert is survived by his widow and one child.

COUNTY SOCIETY NEWS

Barbour-Randolph-Tucker

The Barbour-Randolph-Tucker County Medical Society met in the Y. M. C. A. building at Elkins at seven o'clock on the evening of October 16, with ten members in attendance. Dr. W. E. Whiteside presided in the absence of the president. Two new members were taken in at this meeting. They were Dr. E. M. Dunstan, formerly of Georgia and now with the City Hospital, and Dr. Russell S. Wolfe, who recently located in Elkins and who is specializing in eye, ear, nose and throat.

During the business meeting of the society, a motion was made and passed which read: "The Barbour-Randolph-Tucker County Medical Society condemns and disapproves the free administration of serums and vaccines by its members, except to the indigent poor."

Dr. E. M. Dunstan gave a most interesting talk on pyelitis. In this discussion he gave the etiology, pathology, classification, prognosis, and treatment. This was one of the most instructive as well as practical discussions that the society has heard for some time. The talk was discussed by Dr. A. P. Butt, Dr. M. B. Williams, Dr. S. G. Moore, and Dr. W. E. Whiteside.

Dr. S. G. Moore gave a talk on the value of serums and vaccines as preventives and cures. Dr. Moore called attention to the erroneous custom of calling vaccines "serums," and the distinction between the two. He especially talked on the use of vaccines in typhoid fever and pertussis, the latter of which has been quite prevalent in this section. Dr. Moore said there was no question as to the value of each as a preventive, but that the general opinion was that they were of little or no value as a cure.

J. C. IRONS, Secretary.

Tyler-Wetzel Bi-County Medical Society

The Tyler-Wetzel Bi-County Medical Society, an outgrowth of the recently organized Wetzel County Medical Society, was organized at Sistersville at a special meeting held on the evening of September 30. The meeting was held in the Manufacturers' Light, Heat and Power Company building, and approximately twenty doctors from Tyler and Wetzel counties were in attendance. Dr. J. D. Schmied, president, of New Martinsville, presided, and a strictly business meeting was held.

After the new society was organized it was moved, seconded and carried that the officers recently elected for the Wetzel County Medical Society be retained until the first of January, 1931, and that new officers be elected and installed at that time. It was also moved, seconded and carried that the doctors of Pleasants county be invited to join the new society, and that a tri-county society be formed of the three counties. With this in mind, the secretary was asked to invite the Pleasants county doctors to the next meeting, which will be held in Sistersville on November 5.

The scientific program for the November 5 meeting was discussed and the society voted to invite Dr. Walter E. Vest, of Huntington, president of the state association, and Dr. C. V. Little to put on this program. It was also voted to ask Mr. Joe W. Savage, executive secretary, to present the state obstetrical film for the November 5 meeting. This was a most enthusiastic gathering and a splendid turnout is looked for at the next meeting.

R. H. LEU, Secretary.

Ohio County

Dr. W. W. G. Maclachlan, assistant professor of medicine at the University of Pittsburgh, Pittsburgh, Pa., was the scientific essayist at the October 24 meeting of the Ohio County Medical Society, which was held in the Elk's Club at Wheeling. He read a most interesting paper on "Some Observations on the Problem of Prognosis," and the discussion was opened by Dr. J. W. Gilmore and Dr. W. P. Sammons. Following the scientific program, a buffet luncheon was served to the members present.

H. C. HARPFER, Secretary.

Kanawha County

The first fall meeting of the Kanawha Medical Society was held in the public library building, Charleston, on the evening of October 7, with Dr. E. Bennette Henson, president, presiding. An excellent attendance turned out and the meeting was thrown open to the members of the Woman's Auxiliary and the nurses' training schools of Charleston. The program was a symposium on cancer, stressing the early recognition and prevention. Members who took part in the symposium were Dr. G. C. Schoolfield, Dr. R. H. Walker, Dr. B. H. Swint, Dr. M. I. Mendeloff, Dr. Robert King Buford, Dr. W. P. Black, and Dr. E. B. Henson.

A meeting in honor of the new members of the Kanawha Medical Society was held at the Kanawha Hotel, Charleston, on the evening of October 21, and was preceded by a banquet served to the mem-

bers present. Approximately fifty members of the society were present, and all of the new members were introduced immediately following the banquet. The scientific program was presented by Dr. G. H. Barksdale, who read a splendid paper on "The Clinical Value of the Electrocardiograph," and by Dr. E. L. Lannman, who gave a highly interesting paper on "A Discussion of X-Ray with Special Reference to Gallbladder Diagnosis."

A short business session was held at this meeting and the society members present voted to hold only one meeting each month, instead of two meetings a month as provided in the by-laws. New members taken in at the October 21 meeting were Dr. W. E. Hoffman of Charleston and Dr. J. A. Newcome of Prenter.

D. N. BARBER, Secretary.

Monongalia County

The Monongalia County Medical Society held its first fall meeting on the evening of September 2, with an excellent attendance. The program was furnished by Dr. W. H. McGaw, of Morgantown, University doctor, who read a most interesting paper on "Muscle Transplants with a Report of a Case of Restoration of the Female Bladder Sphincter."

The October 7 scientific program was furnished by Dr. Kenneth M. Day, of Pittsburgh, who gave a splendid paper on "Practical Consideration of Nose and Throat Conditions." Both of these meetings were held in the junior high school library in Morgantown.

G. R. MAXWELL, Secretary.

Mercer County

The fall meeting of the Mercer County Medical Society was held in Bluefield on September 25. 1930, at 8:15 P.M., with twenty-eight members and five visitors present.

The society was very fortunate, indeed, in having Dr. O. L. Miller, orthopedist to the North Carolina State Hospital of Charlotte, N. C. Dr. Miller addressed the society on "Hip Joint Affections in Children." He gave the percentages of hip joint diseases and their admission to the hospital over the last eight years, which were as follows: 28% were acute transient epiphysitis; 12% septic hip joint diseases; 44% tuberculosis; 12% Legge's disease; coxa-vara of adolescence, osteomyelitis, and Brodie abscess were very small percentage. This was one of the most scholarly addresses that this society has ever had the pleasure of hearing. The address was delivered without a note, and the camera vividly presented every point brought out in the eloquent address. This paper was discussed by Drs. Fox, Hosmer, Hoge, John Bird, Stuart, and Rogers. The discussion was closed by Dr. Miller.

R. R. STUART, Secretary.

Marion County

Dr. W. W. G. Maclachlan, of Pittsburgh, was the scientific essayist at the regular September meeting of the Marion County Medical Society, which was held in the Y. M. C. A. building in Fairmont. Dr. Maclachlan read a highly interesting paper on "Some Clinical Observations of Pneumonia," which he turned over to the society for publication in the WEST VIRGINIA MEDICAL JOURNAL.

At this meeting the society accepted the transfer of Dr. David A. Watkins from the Taylor County Medical Society. Dr. Watkins recently moved from Grafton in Taylor county to Monongah in Marion county.

PHILIP JOHNSON, Secretary.

McDowell County

The regular monthly meeting of the McDowell County Medical Society was held in the community room of the Appalachian building at Welch on September 10, with sixteen members in attendance. Dr. W. C. Hall, president, presided at the meeting. Under the head of clinical cases, Dr. G. L. Straub of Welch reported two interesting cases of granulocytic angina. The first case presented the following symptoms and findings: Sore throat, leukocyte count 150; after x-ray treatment the leukocyte count elevated to 18,000, but no improvement was made in general condition of patient. The case terminated fatally in about two weeks. The second case was a younger woman with the same symptoms. She was treated with x-ray of the long bones, but did not show any elevation of the leukocyte count, and the case terminated fatally in three days.

Dr. A. R. Lutz gave a most interesting paper on "The Injection Method of Treatment of Varicose Veins." He discussed, first, the anatomy and physiology of the venous system of the lower extremities, and followed this with a description of the chemicals used and the methods of injecting the solution. He gave a very instructive description of the methods of collapsing the vein so that the solution would come directly in contact with the lining of the vein. Dr. Straub discussed the paper, saying he has found the same good results and advantages of the injecting

method over the operative methods used more frequently in the past.

Dr. Charles F. Hicks reported on the state meeting at White Sulphur Springs last May. Following this, three new members were admitted to the society. They were Dr. S. E. Massey, Dr. Ballard, and Dr. Ralph Counts.

The October 8 meeting of the society was also held in the Appalachian building in Welch, with fifteen members and three visitors present. Dr. W. C. Hall, president, presided. The report of clinical cases was dispensed with, and Dr. Hall introduced the essayist of the evening, Dr. Walter E. Vest, of Huntington, president of the West Virginia State Medical Association. Dr. Vest took for his topic "Medical Organization and Coöperation." He brought out the benefits that could be obtained by closer county, state and national organization and coöperation, putting special stress on local coöperation. Among the many interesting and valuable points that he discussed were the advantages that medical economics should be taught in the medical schools, thereby giving the young medical man a better insight into the future practice of medicine and some of the many problems that he might expect upon leaving college. Dr. Vest also showed how a higher standard of medical ethics would benefit each member and also the medical profession as a whole.

The paper was discussed by Dr. Charles F. Hicks, Dr. J. Howard Anderson, and many other members of the society, who pointed out that closer medical organization and coöperation in McDowell county would not come amiss. On motion of the secretary, Dr. Vest was given a rising vote of thanks for his splendid talk. Following the presentation of a few matters of business, the meeting was adjourned.

A. G. RUTHERFORD, Secretary.

Wyoming County

A new county society came into existence on the evening of September 18, when the doctors of Mullens and vicinity met and organized the Wyoming County Medical Society. The meeting was held in Mullens and resulted in the election of Dr. Ward Wylie, president; Dr. J. F. Biggart and Dr. H. F. Troutman, vice-presidents, and Dr. B. W. Steele, secretary-treasurer. The program was furnished by Dr. R. H. Paden of the state health department.

The new organization has not yet been accepted as a component society of the West Virginia State Medical Association, but expects to get its charter when the council meets in December. About fifteen doctors were present at the meeting, and all of them were highly interested in the new society. There is every indication that the Wyoming society will be a success, especially if the interest of its members can be taken for a criterion. Plans are already under way for the next meeting, which will be held some time in November.

B. W. STEELE, Secretary.

FROM OTHER JOURNALS

Physicians and Advertising

Advertising is contrary to the code of medical ethics. The same rule applies to all professions, and this is one of the outstanding differences between a profession and a business. While the physician is perforce dependent upon his fees for his livelihood, montary return is not and should not be the prime consideration. Advertising smacks too much of a purely business proposition.

In a recent editorial the Minneapolis *Journal* takes the profession to task for not changing its code of ethics regarding advertising. The editor thinks we should use this same tool which quackery has so misused, and that the public suffers because we fail to inform them as to what we have to offer for the alleviation of physical ills. We can not agree that the public would be better served if physicians began to advertise.

The physician depends on the quality of service rendered to increase his practice. Of course, there are a number of modifying factors which affect the size of a practice, such as personality, association, medical jobs, etc., in addition to scientific ability. Would advertising be of benefit to the public in assisting the able and not the inefficient physician to increase his clientele? We think not.

What would we advertise? Our specialties? Then how about the general practitioners? The diseases we can cure? This presupposes a diagnostic ability on the part of the patient. Or perhaps we should publish our faces? Not so good.

Obviously, the newspapers would all favor the adoption of advertising by physicians. How about increasing the cost of medical service? The prohibition of advertising places no physician at a disadvantage.

Most publicity amounts to advertising. This is the reason that the physician, to be consistent, is inclined to sidestep publicity. This does not mean that the public is deprived of medical information. What

with health journals such as *Hygeia* and the *Public Health Journal*, radio broadcasting by national and state medical associations, and health articles in newspapers and magazines, the intelligent reader can easily keep posted.

The newspapers themselves are, to a certain extent, to blame for the usual reticence on medical matters encountered by them. Information, when given, is likely to appear in a distorted, sensational write-up featuring the individual rather than the subject matter. The public is interested in individuals rather than abstract facts, we are told.

Medical groups—so-called clinics—are bound by the same rules of ethics as individual physicians. Articles sometimes appear without the sanction of the individual physician or the group, but not infrequently a group utilizes publicity methods or even solicits patronage in a manner that would be severely criticized in an individual. A hospital sometimes advertises and incidentally the medical group which owns or patronizes the hospital receives publicity. A hospital, in our opinion, should not be operated as a money-making proposition, and therefore should not resort to advertising in lay magazines or newspapers.

No, we can see no reason for changing the *status quo* of medical advertising, and there are many reasons why we should continue to play the game according to the present rules.—*Minnesota Medicine.*

Emphasis on Medical Economics

"It seems more than passing strange that the profession of medicine in the United States still contains a few, a very few, members who believe that there is no such thing as the economics of medicine," declares a writer in a contemporary journal.

"Yet that is a fact," he continues. "Like the proverbial farmer seeing his first giraffe, the proverbial ostrich with his head in the sand, and the cow that stands peacefully in the middle of the crossroads, oblivious to automobiles rushing from four directions, they stubbornly refuse to recognize a fact which is perfectly apparent.

"If this stubbornness existed only in the backwoods and along the outposts, it wouldn't be half so serious. But it exists in exactly the place where new modes of thought ought to originate, where new remedies ought to be applied to old problems, where new inspiration ought to be injected in the veins of an old profession—namely, our medical schools (or the majority of them, at least).

"Is it any credit to American medicine that only three out of seventy-two accredited medical schools in this country offer anything in the nature of a course on medical economics? Can anybody take pride in the fact that an additional three devote an hour or two out of four years to a brief lecture on this subject, and that the remainder just seem to sit back and chuckle in the manner of the farmer in front of the giraffe and murmur, 'Ther' ain't no sech animal'?"

We are not in a position to vouch for the accuracy of the statistics used in the foregoing discussion; it may be that the writer is unduly severe in his criticism of medical college administrators. However, the underlying appeal contained in the above paragraphs should act as a spur to the medical profession generally to check up on its attitude toward this very important question.

The various academies of medicine and county medical societies may well take an inventory to find out if they are devoting enough attention to the question of medical economics and if sufficient time on their programs has been allotted to discussions on this subject.

An increase in the interest of the practicing profession toward the problems of social medicine and a little pressure from the various county societies would undoubtedly result in a greater recognition of the importance of this question on the part of medical school officials. At least, the county societies can set the example, and, in the end, go far toward keeping members of the profession in touch with the newest developments in the economic, social, and governmental phases of the practice of medicine.

How important it is for every physician to have a clear conception of the more serious economic and social problems affecting medical practice and public health is well stated by Dr. Willard C. Rappleye, director of study for the Commission on Medical Education, in an address which he made recently before a group of medical students.

"I have very little hesitancy in believing that a discussion of ways and means of distributing the economic features of illness over large groups of the population is going to be an increasingly important problem before the medical profesion," Dr. Rappleye declared.

"We already see in this country a considerable development of industrial medicine and various other devices that are either insurance or closely resemble it. Possibly most of you do not realize that twenty-three of the leading countries of the world have

already adopted national compulsory insurance. . . . I mention this problem without discussing the merits, the difficulties and the defects of various forms of insurance, but merely to bring to your attention the fact that we are likely to have discussion of the economics of medical service pressing upon us with increasing insistence during the next few years. All of these plans have significant and, in some instances, unhappy implications for the doctor."—*Ohio Medical Journal.*

Testimonials For Sale

An interesting sidelight was recently thrown upon the methods of quacks and patent-medicine vendors by the privilege (?) of perusing a letter from an individual in an eastern country town to a firm of manufacturing chemists, offering, for a consideration of $100 down and one dollar for every letter of inquiry answered, to write a ringing endorsement of the marvelous beneficial effects upon his much-diseased body of the remedy offered for sale by the firm. This sharper naïvely wrote that he had charged his last customer, a well-advertised quack, $150 for a letter detailing a long list of ailments of which he therein asserted the aforesaid quack had cured him. This letter was widely published in the daily papers by its purchaser, and many inquiries poured in to its writer, who, for the further consideration of one dollar a letter, answered each with a circumstantial description of the great benefits he had received from the charlatan's treatment.

Heretofore it has been assumed that it was the ever-present fools who furnished the Elysian feeding ground for quackery, but it seems the clever knave has profitably preëmpted the fool's occupation, and thereby added materially to the accuracy and certainty of the returns from quack advertising. A more complete reduction to absurdity of the value of the *testimonial* could not well be found, to which to direct the attention of the few who think that physicians, because they do not advertise, are much behind the times. How completely gulled is the public by commendatory letters from persons, who, like enough, never saw the man or article they laud so highly! Until the method is widely exposed in the public prints (at the millennium?), it furnishes a lucrative field for the indolent, indigent residents of obscure localities.

Again we urge the county medical societies to launch an organized crusade against quack advertisements in the lay publications in their respective counties.—*Pennsylvania Medical Journal.*

Concerning Specialism

It is irrational to treat one organ without a knowledge of the interrelation of the various organs and parts of the body. This is knowledge which, of course, the specialist must have, and which the properly equipped and conscientious worker in a special field does have in far greater degree than is usually placed to his credit. The deeper a man goes into a branch of medicine, the more clearly he sees these very interrelations which are so often the keynote of successful treatment, and he sees them, we are inclined to think, at times more clearly than the physician who scans a broader field. That there are so-called specialists who do not attain to this conception of their work is self-evident, and the sooner such men are made to feel their limitations the better it will be for the profession at large. The ideal specialist is he who goes deeply into a subject and then extends his knowledge into every related field. Such a man is hardly to be looked upon as narrow or bigoted, or even incapable of entering into the finer appreciation of the idiosyncrasies and temperaments of his patients. It might not be straining a point for him even to act occasionally as "family adviser."—*Boston Medical and Surgical Journal.*

HOSPITAL NEWS

The Englewood Baby Case

A. E. Paul, superintendent of the Englewood Hospital, Chicago, has recently published his side of the famous Bamberger-Watkins baby tangle in *Hospital Management.* The report is interesting, not only because a number of new facts are revealed but also because the report comes from a source that received little if any recognition in the newspaper stories. The complete article in *Hospital Management* is too long to reproduce here, but the most important and interesting portions of Mr. Paul's article are given as follows:

The following is a summary of the principal facts of the case in question: Mrs. Watkins was admitted to the hospital at 1:00 P.M., June 30, 1930, and delivered her baby boy at 4:47 P.M. the same day. The other mother, Mrs. Bamberger, was admitted to the hospital at 4:00 o'clock P.M. and delivered her baby boy at 6:23 P.M., also the same day. The deliveries were normal and the delivery room routine was carefully followed. The Watkins baby was identified within approximately five minutes of its birth by means of an adhesive tape, in accordance with the routine of the hospital. Both the father and

mother of the Watkins baby saw the baby within twenty minutes of its birth. The Bamberger baby was likewise identified within approximately five minutes of its birth. The babies were weighed after birth and each succeeding day thereafter, the weight charts of the respective babies being as follows:

Baby Boy Bamberger (Case No. 85370)

At time of birth, June 30, 1930	8 lbs. 11 oz.
July 1	8 lbs. 4 oz.
July 2	7 lbs. 15 oz.
July 3	8 lbs. 1½ oz.
July 4	8 lbs. 1 oz.
July 5	8 lbs. 2 oz.
July 6	8 lbs. 2½ oz.
July 7	8 lbs. 5½ oz.
July 8	8 lbs. 5¼ oz.
July 9	8 lbs. 6½ oz.

Baby Boy Watkins (Case No. 85367)

At time of birth, June 30, 1930	7 lbs. 11 oz.
July 1	7 lbs. 7 oz.
July 2	7 lbs. 3 oz.
July 3	7 lbs. 1½ oz.
July 4	7 lbs. 2½ oz.
July 5	7 lbs. 5½ oz.
July 6	7 lbs. 5½ oz.
July 7	7 lbs. 8¾ oz.
July 8	7 lbs. 9 oz.
July 9	7 lbs. 9½ oz.

Both mothers and babies were discharged from the hospital July 9. Thereafter, and after the controversy arose, the hospital requested that both babies be brought in to be weighed for comparison with the above record. On July 14 the Watkins baby was brought back to the hospital for that purpose, and on that day its weight was 7 lbs. 10¼ oz. The other baby was not brought back to the hospital.

On July 9, the date of discharge of both mothers and babies from the hospital, a demonstration was made in the nursery to the mothers regarding the proper care and handling of the babies, which demonstration called attention to the adhesive tape on the babies' backs as a means of correct identification, and in that demonstration the nurse lifted up the gown of the baby boy Bamberger and showed both mothers the adhesive tape which was still intact on the baby's back, and advised the mothers how this adhesive tag could be removed.

While in the hospital, each day when the babies are bathed and when taken to the mother for nursing, the nurse is required to examine the tag on its back and compare this tag with other data on the baby. This procedure is scrupulously followed in the case of all babies in the hospital.

Both mothers occupied beds in one room during their stay at the hospital. Both fathers, being out of work and not having been employed for some time previous, visited the hospital and were in the same room, and therefore both mothers and fathers had every opportunity to and did become well acquainted during the stay in the hospital. At no time during the convalescence was there any hint that the babies had been mixed, and, incidentally, the patients expressed themselves as pleased with the service of the hospital. They both left the hospital the same afternoon, July 9, at 2:35. At that time the nurses dressed the infants for departure, noting the tags, as they later testified.

Four days after the departure of the mothers and babies from the hospital, for the first time the claim was made that Mrs. Watkins had received the wrong baby from the hospital, the statement being made that at the time Watkins removed the tag from the back of his child the tag contained the name "Bamberger." This tag was not removed until the third or fourth day after leaving the hospital, during which time both Mr. and Mrs. Watkins had washed their baby, and, from their testimony, did not notice that the tag read "Bamberger," as afterwards claimed by Mr. Watkins. In the case of the other family, the tag was removed after arriving home from the hospital and thrown away. At the request of Mr. Watkins, this tag was found and delivered to Watkins. Watkins then brought the Bamberger tag to the hospital, stating that the Watkins tag was found on the Bamberger baby and the Bamberger tag was found on the Watkins baby.

The hospital's attitude was and has been that it would do all in its power to ascertain whether such a mistake had in fact been made, and, in order to carry out this purpose, it arranged a conference with the fathers of the babies in question, at which it produced all nurses and supervisors having to do with the two babies in question, so that the facts might be determined. At that conference no irregularities in routine could be discovered. Before the conference adjourned, the fathers demanded that a blood test be made by a disinterested laboratory of their selection and not by the hospital's laboratory, to which the management of the hospital agreed, but cautioned the fathers to select a reputable laboratory to help them, since the babies had not been brought back to the hospital with the tags left attached to their backs, the only original means of identification. A repu-

table laboratory was chosen and a test made, which did not reveal the identity of the infants. So far as the records of the hospital and the evidence of the obstetrical department personnel go, there is no evidence of any mix-up or error from the time of the birth of these babies until they left the hospital.

A few days after the above conference at the hospital one of the fathers arranged with Dr. Arnold H. Kegel, city health commissioner, for an investigation. The hospital assured the health commissioner of its willingness to furnish any information desired.

Late that evening newspaper reporters came to the hospital for news. Although they obtained no information from the hospital, it was astounding what the papers fed the public the next morning.

The health commissioner arrived with his staff the next morning at eleven o'clock, July 19. Long before his arrival reporters and cameramen surrounded the hospital.

The entrance of the health department into the matter resulted in additional publicity, including photographs and statements of various experts who were asked to solve the "mystery." One started by fingerprints, another by cranial examinations, and various other methods were pursued. Finally, at what was announced as the deciding conference, all the experts were present with the fathers and representatives of the hospital, and at this conference a vote was taken which resulted in a count of 12 to 1 to the effect that the experts believed that the babies were then in the wrong homes, based chiefly upon the evidence presented by the hospital that the tags had been properly attached to each infant promptly after birth and that the babies left the hospital with the original tags still attached.

The health commissioner's decision was that the babies were in the wrong homes. This assumption appeared to be based entirely upon the belief that the parents were correct in their statement to the health commissioner, that they had actually found the tags upon the respective babies' backs, upon which was written the name and identification of the other baby. No scientific evidence seemed to be sufficient to identify either baby with either set of parents.

The importance of the table of weights of the two babies as bearing on the controversy seems to have been entirely overlooked or ignored and has not been commented upon in any of the articles appearing in the public press. The logical conclusion to be reached from the table of weights, together with the other evidence presented, is that the Watkins baby was dlivered to the Watkins parents and that the Bamberger baby was delivered to the Bamberger parents.

Considering the daily record made of the weights of the respective babies, the evidence of the affixing of the identification tapes on the respective babies within a few minutes after they were born, the exactness of the routine of the hospital in connection with these babies during all of the time that they were in the hospital, including the comparison of the tapes with other marks of identification upon the babies during the time that they were in the hospital, that the Bamberger baby and the tape upon its back was exhibited by one of the nurses to Mrs. Bamberger and Mrs. Watkins just before they left the hospital, with an explanation as to the method of its removal, that the claim of a mix-up was not made until four days after the babies left the hospital, and that then only the identification tapes were produced, not on the babies but in the hands of the fathers, it seems reasonable to assume that no mistake or mix-up was made in the identity of the babies during the time that they were in the hospital.

It is especially significant that when the Watkins baby was weighed at the hospital on the fifth day after it left the hospital its weight was in line with the daily record of weights made of that baby while it was in the hospital, which was approximately one pound less than the record of the daily weights of the Bamberger baby. The evidence seems conclusive that the lighter baby is the Watkins baby.

All available evidence tends to show that the right mothers received the right babies and left the hospital with them. The hospital has done everything in its power to clear away any uncertainty regarding the identity of the babies. Both mothers have said, in the presence of witnesses, that they have the right babies, and one of the fathers is reported in a newspaper as saying, "Nobody will dare take that boy away from me. I'm satisfied he's mine." Another newspaper printed a statement made by Mr. Bamberger as follows: "We are convinced that the baby is ours. We have given the boy our name because there is no doubt in our minds that we are the parents. We will not sue or be a party to suits against the hospital. We will not permit the baby to be submitted to any more so-called tests, and we certainly won't allow him to be taken to a women's mass meeting to be paraded."

In conclusion, it is the position of the Englewood Hospital that the Watkins baby was delivered to the Watkins parents and that the Bamberger baby was delivered to the Bamberger parents. The evidence supporting this conclusion is: First, that the adhesive

tape identifying each baby was attached to each baby promptly after its birth and remained upon the babies until after they left the hospital; second, that the weight of the Watkins baby taken five days after it left the hospital corresponded with its record of daily weights taken while it was in the hospital; third, that the mothers seemed satisfied on leaving that at all times during their stay in the hospital they nursed the same baby as the one that they took home from the hospital; and, fourth, that the parents of the Bamberger baby believe that they have the right baby, have had it baptized as theirs, and refuse to give it up.

PUBLIC HEALTH

West Virginia Cripples

More West Virginia crippled children are in hospitals or under treatment than ever before in the history of the state, according to records in the office of the Crippled Children's Council. The concerted action of parents, organizations, and interested individuals following the holding of the diagnostic clinics in the various sections of the state is responsible for the placing of scores of children under treatment. A large percentage of these children are from the rural areas of the state, the parents availing themselves of the opportunity to have an orthopedic specialist examine their handicapped children, and following the advice given.

A systematic plan of follow-up is carried out after each clinic, with the result that a considerable number of children enter hospitals for care and treatment soon after the holding of the clinics.

Frequently these children go in groups, as was the case in Randolph county recently, where the chairman, Harris A. Jones, arranged to transport the most urgent cases to the hospital in a private bus. A parent or guardian usually accompanies each child so that both are better satisfied to undertake treatment, and the after-care necessary is then explained to the parent.

Following the holding of a clinic, the case of each child is discussed with the local committee by the executive secretary of the Crippled Children's Council, and plans are made to carry out the advice of the orthopedic specialist. The approximate cost of the care of the cases needing state aid is obtained and compared with the county allotment from the state funds, and, where necessary, more funds are raised by the local branch of the West Virginia Society for Crippled Children. Where the family is able to finance the cost they are urged to place the child under care at once, the Crippled Children's Council assisting in the making of arrangements where requested. In every case the family makes the choice of the orthopedist under whose care they wish their child placed.

After each clinic the family physician is advised by the Crippled Children's Council of the findings and the treatment recommended, and his coöperation and support is asked in assisting the family to carry out the treatment necessary.

This program of the Crippled Children's Council, which was inaugurated less than a year ago, is not only lessening the suffering of many children, but is literally putting them on their feet to become self-supporting citizens instead of dependents on their families or the community.

Milk Sanitation

During the past seven years the United States Public Health Service has been engaged in studies relating to milk sanitation. These studies had their beginning in response to a request from a state health department to formulate and assist in beginning the execution of a state-wide plan of milk control. The plan which has been developed by the United States Public Health Service has been so successful in improving the quality and in increasing the consumption of milk in the state in which it was first used that nearby states, one after another, have adopted the plan and called upon the Public Health Service for assistance until now some 375 cities located in more than twenty states have adopted the program.

The results of the milk sanitation program in the state of Mississippi are of interest. The results so far obtaining in that state, after two years' experience with the standard milk ordinance, are as follows:

There are now 26 cities, containing over 75 per cent of the state's urban population, enjoying a high-grade protection of their milk supplies, as against six cities formerly. The improvement in sanitary quality has been quite satisfactory; the retail raw milk has improved 91 per cent, the raw milk delivered to pasteurization plants 89 per cent, and the pasteurization plants 109 per cent. Milk consumption has increased 23 per cent. The number of cities having pasteurized milk has doubled, and the consumption of pasteurized milk has risen 117 per cent. With longer experience, stricter enforcement, and the adoption of the ordinance by more cities, an excellent milk supply for the whole state of Mississippi may be expected within a very few years.

Meningococcus Meningitis

At a recent conference of state and territorial health officers with the Public Health Service, it was pointed out by representatives of the Service that reports received from state health officers for the last five years indicate that there has been a progressive increase in the number of cases of meningococcus meningitis that have been recorded. It is true that the actual number of cases are not large when compared with the total population. It is significant, however, that each year there has been an increase over the preceding year, and that this rise has been continuing for five years.

When the prevalence of meningococcus meningitis increased during the period of 1915 to 1917, the number of cases rose in Europe before the movement occurred in the United States; but, after the World War, the number of cases did not rise noticeably in Europe until 1929, and then the increase was not general and the rates were not high.

Incomplete reports for the first three months of 1930 show rates higher than the normal for England and Wales, Scotland, The Netherlands, and Poland, but no figures from Europe have been found indicating a general increase in the prevalence of this disease comparable with that in the United States.

There was an outbreak of meningococcus meningitis early this year in the Anglo-Egyptian Sudan, and reports from the French Protectorate of Morocco show some increase in cases in March. Recent reports from Asia do not show anything unusual in the prevalence of the disease. Canada has reported comparatively few cases, but there has been a slight increase in incidence in Mexico.

The nomenclature relative to meningococcus meningitis has been changed several times, the disease having been variously designated cerebrospinal meningitis, epidemic meningitis, and other similar terms. For this reason, earlier figures are not exactly comparable with the later ones.

The total number of cases of meningococcus meningitis reported throughout the United States for the last five years is as follows: 1925, 1,859; 1926, 2,226; 1927, 3,204; 1928, 5,781; 1929, 9,660.

In considering these figures, the difficulties of obtaining accurate reports should be borne in mind.

Since March, 1930, the reported prevalence of meningococcus meningitis in the United States has been lower than it was in the corresponding months of 1929.

Infant Mortality Rates

The United States Department of Commerce has recently presented a table showing, by states, birth rates for 1929 and infant mortality rates from 1915 to 1929, inclusive. In 1929 the infant mortality rate (deaths of infants under one year of age per 1,000 live births) showed a marked decrease as compared with 1915. In fact, the rate (68) was the second lowest since the establishment of the birth registration area in 1915. At that time this area was composed of ten states and the District of Columbia, and included 31.1 per cent of the population of continental United States, while in 1929 there were 46 states and the District of Columbia in this area, and 94.7 per cent of the total population of continental United States.

For the sixth consecutive year, Oregon leads the states with the lowest infant mortality rate (48). In 1929, eleven states had lower rates than at any time since their admission to the registration area. These were: Minnesota (51), Arkansas (58), New Jersey (60), Illinois (61), Massachusetts (62), Florida (65), Michigan (66), New Hampshire (68), Louisiana (74), Georgia (76), and South Carolina (91). Two states—Iowa and Maryland—in 1928 attained their lowest rates, which did not change in 1929.

Taking the rate for the registration area of continental United States as a basis, 24 states had lower rates in 1929 and 21 had higher rates, while New Hampshire's rate was identical. With the exceptions of Colorado, Maine, and Wyoming, the high infant mortality rates in these 21 states were due to the great infant mortality among the colored populations, especially in rural districts.

The birth rate for the year 1929 was 18.9, the lowest for any year since the establishment of the birth registration area. Oregon had the lowest rate (14.1) of any state in the registration area. Significant of "the declining birth rate" are the rates of 25 states which are lower than the rate for the birth registration area of continental United States. The highest birth rate, 26.9, is recorded for New Mexico, and Utah 24.8, North Carolina 24.7, Alabama 24.0, West Virginia 23.8, Mississippi 22.9, South Carolina 22.8, follow in the order named. It will be noted that, with two exceptions, the high rates in these states are undoubtedly due to the large percentage of colored population.

GENERAL NEWS

Medical Costs in West Virginia

The active practitioners of medicine in West Virginia, numbering approximately 1,500, collect a total of $10,455,162 annually from the residents of this state, according to statistics just compiled from the questionnaires recently mailed out to the members of the West Virginia State Medical Association. This amount is the actual collections made by the medical profession. If the cost for the services of the medical profession is considered as 33 1/3 per cent of the total cost of medical care, then the amount spent annually for medical care in West Virginia is in excess of thirty million dollars, or $18.18 per person.

Out of the $10,455,162 collected by the West Virginia doctors, the sum of $2,140,139 is paid for office rent, assistants' salaries, etc., leaving an annual net income of $8,314,923. Figuring on this basis, the average net income of the West Virginia doctor is $6,414.43 a year. The surgeons are the highest paid of any branch of the profession, averaging $9,864.50. X-ray specialists are the lowest paid, averaging $4,000 a year. Between these two extremes come the dermatologists, averaging $9,800; the obstetricians at $9,700; the eye, ear, nose and throat specialists at $7,664.61; the internists at $7,811.60; the urologists at $6,428.57; the pediatricians at $5,812.50; the orthopedists at $5,990, and the general practitioner at $5,235.26. Of the smaller groups practicing special branches of medicine are the proctologists at $7,500, the psychiatrists at $4,100, and the public health workers at $3,933. The average income of the "contract" doctor is $4,166, or slightly less than that of the general practitioner.

The survey conducted by the West Virginia State Medical Association is the first attempt ever made to secure an exact estimate of the costs of medical care in this state and one of the first surveys of its kind ever made in this country. The survey was conducted by means of the recent questionnaires, and approximately three months were required to carry out the work and assemble the statistics. All of the figures given above, and those that follow concerning average gross and net incomes, are mathematically correct, having been averaged from the actual figures furnished by the questionnaires. The remaining figures and statistics concerning total gross and net incomes, charity work, etc., are not mathematically correct, but they are as nearly correct as it is humanly possible to get them. In arriving at the total gross and net figures, the total number of returned questionnaires was divided into the total number of active practitioners in the state. Then the questionnaire totals were multiplied by the quotient, giving the results in the accompanying chart. Only six branches of medicine are given in the chart. The returns from the remaining branches were small and were included in the miscellaneous division, although the actual results are given elsewhere in this article.

According to the returned questionnaires, the largest net income in the state's medical profession is $28,000 a year, and there are two physicians who make that amount. It might be interesting to point out that one is a general practitioner, the other a surgeon. The smallest net income is $420 a year, listed by a general practitioner in a rural district who has been in active practice for twenty-four years. The country doctor, however, does not fare as badly as one might think. The average net income of the rural general practitioner is $4,396 a year, and the average net income of the urban general practitioner is $6,528.64 a year. The "contract" doctor was figured separately, showing the average net contract to be worth $4,166 a year.

The average West Virginia doctor collects 79 per cent of his accounts annually and loses the remaining 21 per cent. This 21 per cent amounts to a total of $2,779,220 annually that is lost in bad accounts. The total amount of charity work contributed by

AVERAGE INCOMES, COLLECTIONS, AND CHARITY WORK OF THE MEDICAL PROFESSION IN WEST VIRGINIA

	Average Income (Gross)	Average Income (Net)	Total Income (Gross)	Total Income (Net)	Percentage of Collections	Total Charity Work
General Practice	$ 8,005.86	$5,235.26	$8,334,105	$5,449,908	77	$958,941
Surgery	14,783.33	9,864.50	1,463,550	976,587	75	208,290
Eye, Ear, Nose and Throat	12,454.34	7,664.61	971,439	597,840	92	172,470
Internal Medicine	10,388.00	7,811.60	492,600	351,522	75	31,164
Pediatrics	14,300.00	5,812.50	231,000	139,500	76	42,900
Urology	7,522.00	6,428.57	187,500	135,000	76	22,566
Miscellaneous	8,391.58	6,287.82	904,688	654,556	87	117,033
GRAND TOTALS	$ 9,580.60	$6,414.43	$10,455,162	$8,314,923	79	$1,548,864

the medical profession each year is $1,548,864, or an average of $1,032.57 by each West Virginia doctor. The amount of charity work added to the amount of uncollected or bad accounts gives a total volume of $4,328,084 for which the profession does not receive a cent. If one-half of this amount could be turned into profitable channels, it would mean an increase of more than $1,400 in the income of every practicing physician in the state.

In this survey of medical economics an attempt was made to determine the number of years the average doctor would be in practice before realizing a comfortable income. Although a special study of the questionnaires was made to obtain this information, it was found that the figures were so much at variance that no standard could be established. In many cases the younger doctors who had been in practice for only six or seven years were making as much as or more than doctors who had spent from twenty to thirty years in the practice of their profession. It was quite clear, however, that the newer graduates just out of college were having a hard time making both ends meet. It was estimated that at least three years were required for the young doctor to get a foothold in the community or city in which he set up an independent practice. There were, of course, exceptions to this rule.

There was one other matter of considerable interest shown by the questionnaire that has not as yet been mentioned. That was the whole-hearted response of the members of the Association. It has been estimated by many large advertising houses that the maximum return on a professional questionnaire was 50 per cent, while the average return was lower than that. The members of the West Virginia State Medical Association returned 72 per cent of their questionnaires and a few are still trickling in from day to day. It was this hearty and prompt response that enabled the JOURNAL to correlate the facts and figures and to have them ready for the November issue.

Brinkley's Last Stand

The fantastic case of Quack John R. Brinkley, of Milford, Kansas, has attracted such nation-wide attention that it was noted with unusual interest that the Brinkley case had finally been disposed of. On September 15, 1930, the members of the board of medical registration and examination of Kansas visited the Brinkley hospital at Milford and that was the beginning of the end. Brinkley's hearing was resumed the next day, and the members mentioned above testified that the operations performed at the hospital were not the operations described in the literature sent out to the lay public by the Brinkley hospital. They were also unanimous in their conclusions that these operations could not possibly reduce an enlarged prostate and that they could not have any rejuvenating effect. After numerous affidavits were introduced, the board went into executive session and on September 14 issued an order revoking Brinkley's license.

The *Journal of the Kansas Medical Society*, in its October issue, gives the following report of the board of medical registration and examination, and follows this with some comment on the case:

"In the matter of the revocation of the certificate of Dr. John Richard Brinkley to practice medicine and surgery in the state of Kansas.

"Dr. L. F. Barney, complainant, *vs.* Dr. John Richard Brinkley, respondent.

"Order and judgment revoking certificate of Dr. John Richard Brinkley to practice medicine and surgery in the state of Kansas.

"Now, on this 17th day of September, 1930, at an adjourned meeting of the board of medical registration and examination of the state of Kansas, held in the Hotel Kansan in the city of Topeka, Shawnee County, Kansas, the above entitled proceeding came on for decision by said board; said proceeding having been instituted upon the written complaint of Dr. L. F. Barney, complainant, of Kansas City, Kansas, filed with the secretary of said board on April 28, 1930, charging Dr. John Richard Brinkley, respondent, of Milford, Kansas, with being guilty of gross immorality and unprofessional conduct and requesting the revocation of the certificate of said Dr. John Richard Brinkley authorizing the latter to practice medicine and surgery in the state of Kansas; evidence on behalf of complainant having been submitted to said board on July 15, 16, 17, 18, and 22, 1930, and evidence on behalf of respondent having been submitted to said board on July 18, 23, 24, 25, 28, 29, 30, and September 16, 1930, and evidence in rebuttal on behalf of complainant having been submitted to said board on the 16th day of September, 1930; complainant having appeared in person and by his attorneys, William A. Smith, attorney general; W. C. Ralston, assistant attorney general, and Donald A. Campbell, of Topeka, Kan., and respondent having appeared in person and by his attorneys, F. S. Jackson, James E. Smith, and Schuyler W. Jackson, of Topeka, Kan.; and said

proceeding having been taken under advisement by said board on the 16th day of September, 1930.

"The following members of the board of medical registration and examination of the state of Kansas, constituting the entire membership of said board, were present during all the time of such hearing and are now present: Dr. J. E. Hassig, president; Dr. A. S. Ross, secretary; Dr. H. Z. Hissem, Dr. G. R. Dean, Dr. C. H. Ewing, Dr. M. C. Jenkins, and Dr. O. S. Rich.

"Thereupon, said board, being fully advised in the premises, finds:

"1. That on the 15th day of June, 1916, respondent, Dr. John Richard Brinkley, was granted certificate No. 5845 by the board of medical registration and examination in the state of Kansas, permitting and authorizing him to practice medicine and surgery in said state.

"2. That respondent, Dr. John Richard Brinkley, has been, and is, guilty of gross immorality as charged in said complaint.

"3. That respondent, Dr. John Richard Brinkley, has been, and is, guilty of unprofessional conduct as charged in said complaint.

"4. That the certificate of respondent, Dr. John Richard Brinkley, authoriizng him to practice medicine and surgery in the state of Kansas, should be revoked.

"It is therefore considered, ordered and adjudged by the board of medical registration and examination of the state of Kansas, that the certificate heretofore issued to respondent, Dr. John Richard Brinkley, authorizing him to practice medicine and surgery in the state of Kansas, be, and the same is, hereby revoked.

"(*Signed*) J. F. HASSIG, *President*,
Board of Registration and Examination of the State of Kansas.
A. S. ROSS, *Secretary*,
Board of Registration and Examination of the State of Kansas.
C. H. EWING, G. R. DEAN, O. S. RICH, M. C. JENKINS, H. Z. HISSEM,
Board of Registration and Examination of the State of Kansas.

"Attorney General Smith was reported to have declared that the Brinkley-Jones hospital at Milford would be prevented from operating. Apparently this was no idle threat, for he has applied for an injunction to close the hospital.

"He also supplied the county attorney of Geary County with information against the man Osborn who has been practicing at the Brinkley-Jones hospital for a number of years without having a license from the board of registration and examination. The evidence was obtained from witnesses who testified in the Brinkley hearing and there were about fifty counts against him.

"It is understood, however, that Osborn is no longer in the state, and there is some question if requisition can be secured.

"The attorney general must be commended for his ultimate interest in the Brinkley affair and the expedition with which the hearing was conducted after he took an active part in it, as well as for his activity in seeing that violators of the medical practice act are prosecuted."

Look Out for C. Bancroft

On September 10, 1930, a man giving the name of Dr. C. Bancroft rented an office in Charleston, West Virginia, and a few days later began to receive callers. He did not have his name inserted in the directory of the building in which his office was located, and he did not put any name upon the door of his office. His peculiar conduct aroused suspicion and an investigation was made. It was learned that Bancroft told the owner of the building that he came to West Virginia from Asheville, North Carolina, where he said he had lost two hundred thousand dollars in a bankrupt health resort. When offered an introduction to some of the leading Charleston doctors, Bancroft declined. He announced that he would mind his own business and he expected (or perhaps hoped) the Charleston doctors would do likewise.

About ten days after Bancroft located in Charleston he was called upon by a representative of the West Virginia State Medical Association. He announced that he was in no wise practicing medicine. Instead, he stated that he was selling electro-medical appliances and had a number of men working under him. After this call was made, a policy of watchful waiting was adopted. The wait was not for long.

Early in October, Bancroft's first patient was discovered. The patient was a hat-cleaner named Louis Menaeds, of 166½ Summers Street, Charleston. The first visit Menaeds made to Bancroft he parted with $45 of hard-earned money. He made two or three more trips and was mulcted for a total of $125. In return, he obtained some "extra special pills that had been put up in Germany and which could not be obtained anywhere in this country." After taking the pills for several days, Menaeds became so violently ill that he consulted a regular

doctor and the exposé of Bancroft followed. The names of half a dozen other patients of Bancroft were secured, all of them having been mulcted for large sums of money. The total ran up into hundreds of dollars. It was learned that Bancroft spoke seven different languages, and that all of his patients had been foreigners.

As this evidence of Bancroft's quackery was being dug up, Bancroft himself learned, from some unknown source, what was in the wind and took French leave. He left an office filled with installment furniture, but nothing more. He was last seen at a Charleston railroad station on the evening of October 10, when he said he was "going out of town for a day or two."

There is a good chance that Bancroft is now located in some other city in West Virginia, although perhaps under a different name. He is a good man to watch out for. If found, he will probably be bleeding the foreign element for anything and everything he can get.

State Nurses' Meeting

The twenty-fourth annual meeting of the West Virginia State Nurses' Association was held in Fairmont, October 23–25, 1930. A program of interest not only to nurses but to the public at large was presented during the three-day conference. Some of the subjects were: "The Unnursed Sick," "Follow-up Care of Orthopedic Cases," "Amusing the Convalescent Child," "Standards in Building a Child Health Program," "Psychology Applied in the Education and Work of the Nurse," and "West Virginia's Crippled Children."

Because of the increased interest being shown in the subject of social hygiene, an important part of the program on October 24 was devoted to a discussion of "Social Hygiene in a Nursing Program." Miss Edna T. Moore, of New York, associate director of the National Organization of Public Health Nurses, was the principal speaker. She was followed by several others who discussed the subject from the viewpoint of an institutional nurse, a public health nurse, a social worker, and of the state health department. The need of correlation of all interests was presented by Dr. C. W. Waddell, clinician of the Fairmont Venereal Disease Clinic.

A number of well-known health authorities from outside the state were on the program. These were Miss Hortense Hilbert, American Child Health Association, New York; Miss Anna C. Gladwin, Akron, Ohio; Miss Carrie Hall, superintendent of nurses, Peter Bent Brigham Hospital, Boston, Mass.; Miss Ruth A. Heintzelman, Orthopedic Unit, Pennsylvania Department of Welfare; Mrs. Elsa Butler Grose, Columbia University, New York, and Miss Edna L. Moore, associate director of the National Organization in Public Health Nursing, New York.

Others on the program included Dr. Harry Hall, Wheeling; Dr. George Evans, Hopemont; Dr. George Grissinger, Beckley; Dr. Elizabeth Stalnaker, West Virginia University; Dean Dorcas Pritchard, Fairmont State Normal; Mrs. H. C. Lounsbery, Huntington; Mrs. Kathryn Trent, Charleston; Dr. A. T. Post, Clarksburg; Hon. W. S. Johnson, Charleston; Dr. A. S. Jones, Huntington; Mrs. Ada C. McDermott, State Health Department, and Mrs. Andrew Wilson, Wheeling.

A number of social affairs were held, including a luncheon given by the Cook Hospital Association, a tea by the staff and alumnæ association of the Fairmont State Hospital, and a banquet and dance by the Cook Hospital Alumnæ Association and Marion County Nurses.

Miss May M. Maloney, of Fairmont, was reelected president of the State Nurses' Association.

Toxicologist Wanted

The United States Civil Service Commission states that the position of senior toxicologist, Bureau of Chemistry and Soils, Department of Agriculture, Washington, D. C., is vacant, and that the following method of competition will be used to fill the vacancy: Instead of the usual form of civil-service examination, the qualifications of candidates will be passed upon by a special board of examiners, composed of W. W. Skinner, assistant chief, chemical and Technological Research, Bureau of Chemistry and Soils; M. X. Sullivan, biochemist, Hygienic Laboratory, and A. S. Ernest, examiner of the United States Civil Service Commission, who will act as chairman of the committee. For the purposes of this examination all of these men will be examiners of the Civil Service Commission.

Qualifications: The examination will consist solely of the consideration of qualifications by this special board. The minimum qualifications for consideration are education equivalent to that represented by an M.D. degree from a college of medicine of recognized standing or a Ph.D. or Sc.D. degree from a college or university of recognized standing with major work in toxicology, pharma-

cology, zoölogy, physiological chemistry, or a closely related branch of science, and experience in important research or experimental work in pharmacology or toxicology, or both, of sufficient length and character to demonstrate keen judgment and perception of the scientific problems fundamental to the duties of the position. The appointee must possess executive ability and be free from personal traits and interests that might interfere with the smooth operation of the division. This position is of a highly specialized character and of great importance, and it is desired to secure the services of a person who has had broad training and wide experience in toxicology or pharmacology, or both, and in the supporting branches of science, and who is well qualified to initiate research and handle work of coöperative and supervisory character. With these ends in view, considerable weight will be given to the applicant's general reputation and to the opinions of persons qualified to vouch for the applicant's general reputation and attainments.

Publications: Each candidate must submit with his application a complete list of publications of which he is the author, together with such reprints as may be available.

Duties of the position: The duties are to plan and carry out difficult investigations on the toxicology of metals and other products in foods. This work involves a study of their influence on kidney function, growth, reproduction, composition of blood stream, digestibility, relation to physiological function, and such other methods as will tend to show any difference in the action or utilization of foods when containing such products; also, the oral and written presentation of the results of these researches before interested groups, and the establishment of contacts with professional workers in this field.

Salary and promotion: The entrance salary for this position in Washington, D. C., is $4,600 a year; if appointment is made to the Field Service, the entrance salary may be at any rate within the salary range of $4,600 to $5,400 a year, varying with conditions obtaining at the headquarters where the vacancy exists.

Full information may be obtained from the United States Civil Service Commission, Washington, D. C.

Physicians Report on Nursing Supply

On a typical day in a period of heavy sickness load, only two per cent of those patients who needed a special or private-duty nurse were unable to get one, it was shown by the answers of 4,000 physicians to questionnaires on the demand for nurses in their own practice.

This case check-up by the physicians substantially agrees with the growing evidence from other sources, such as the registries, that there is at present no shortage in the general supply of nurses, and that it is, indeed, closely approaching the saturation point, as far as actual, economic demand is concerned. These studies of the nursing situation were made by the Committee on the Grading of Nursing Schools.

Informal comments from the doctors corroborated statistical findings that, while it is sometimes hard to get a nurse for Sundays, out-of-town cases, or 24-hour duty, it is almost never impossible to find any special nurses at all.

The physicians questioned represent those who minister to the most heavily nursed portions of the community, in cities and towns of all sizes. The months studied were January and March, two peak months of illness. It was found that, on the day of his answer, the typical physician had three patients who needed special nurses and two who got them. But of all the patients who, in the estimation of the attending doctor, needed a nurse, only two in each 100 were unable to find one.

Of the patients who did not have the special nurse recommended as necessary, it was found that 45% could not afford a nurse, 29% were cared for by relatives or friends, 13% did not want a nurse, 7% were cared for by a visiting nurse. Only 6% of these patients, or 2% of the total number, wanted a nurse but could not find one.

These findings are especially interesting from the standpoint of actual economic demand and willingness to pay for nursing service on the part of patients. More than 500 patients, for example, did not want a nurse and did not engage one, though, in the opinions of their physicians, they needed her skilled nursing care.

In the period of a month, the typical physicians in this group had five patients who employed nurses. They estimated that, given adequate floor service in the hospital, two of the five would not have needed "specials." Twenty-six per cent of the physicians felt that some of their patients could have been cared for by a visiting nurse or hourly service, and 27 per cent felt the services of relatives or competent servants would have been adequate.

Since the physicians reporting were a selected group, caring for the most heavily nursed members of the community, it would seem, from the fore-

going facts, that for the profession as a whole the daily average of patients per physician actually needing skilled nursing care is much less than three.

Half the physicians in this heavily nursed group declared that every one of their patients who needed private duty nurses had them. There is, therefore, reason to believe, the study states, that the lack of a nurse is often due not to a shortage, either in the general or local supply, but to the patient's decision that he did not want or could not afford a nurse.

Since, in the opinion of the doctors, two of every five patients employing special nurses could have been cared for by the floor service of a *well-run* hospital, the increase of adequacy of such floor service would mean a decrease in the employment of "specials" and additional employment of full-time graduates in the hospitals instead.

Many hospitals are already studying the problem of increasing the supply of graduate nurses on their staff so as to lessen the cost of nursing care for the patient and yet add little additional expense to the hospital's budget.

Seventy-three per cent, or almost three-fourths, of the physicians said they feel it is harder for their patients to pay the nurse's fee than to obtain her services. Those in the north central and western states were more emphatic on this point. Paying the fee is slightly less of a problem in the larger cities than in the smaller ones.

Of 23,500 physicians who answered questions as to the general need for private-duty nurses in their practice, 87 per cent of the general practitioners said they need them often; 5 per cent, occasionally; and eight per cent, practically never.

The specialists, who make up two-fifths of the total number reporting, showed somewhat less demand for the special nurse, with 79 per cent requiring them frequently for their cases and 17 per cent practically never. The private-duty nurse is most in demand by the surgeon and obstetrician, 98 and 94 per cent, respectively, saying they often need her for their patients. The percentage of need in the other specialties were: Internal medicine, 89%; orthopedic surgery, 86%; pediatrics, 85%; urology, 85%; ophthalmology, 75%; neurology, 57%; tuberculosis, 47%; industrial medicine, 47%; dermatology, 33%; röntgenology, 25%; public health, 9%.

Though physicians sometimes have to call two or three registries to get nurses for certain types of cases, their comments show much more frequently an inability to get the kind of nurse they feel is particularly needed for the case, rather than a total unavailability of nurses.

About two calls per physician were refused during a one-month period. The doctors find that nurses are most likely to turn down calls for 24-hour duty, night duty, cases in the home, Sunday or holiday cases, and those requiring the nurse to go out of town.

In 52% of cases, the source of supply for nurses was the hospital registries; 21% of the physicians got nurses through their own lists; 17% through the central registries; 5% from the commercial registries; and 5% from unspecified sources.

Not unnaturally, the physician finds the nurse he gets from his own private list the most satisfactory. Nine out of ten of all the physicians said they would like to have the nurse on their last case back again.

Suicide Among Negroes

Although negroes have a homicide death-rate over eight times that of the white population, they comparatively rarely take their own lives. In 1927, the latest year for which general population statistics are available, there were only 373 suicides among negroes out of a total of 14,096 in the registration states of the United States. This number gives a death-rate of 4.1 per 100,000 population for negroes as compared with a rate of 14.1 for the whites. In other words, almost three and one-half times as many whites as negroes in every hundred thousand commit suicide. It would appear, therefore, so far as the population figures indicate, that suicide and homicide do not go hand in hand, and that they reflect very different psychological mechanisms, even though both are acts of violence. Homicide is likely to be the outcome of sudden passion and to follow immediately the murderous impulse; suicide, on the other hand, is usually the result of brooding introspection—the very condition which makes homicide impossible.

But though relatively few negroes commit suicide, it is interesting to find that, among the industrial policyholders of the Metropolitan Life Insurance Company, the divergence between the suicide rates for white and colored people is not nearly so great as it is in the country at large. In 1927, the standardized death-rates were, respectively, 11.1 and 6.2 per 100,000 among the white and colored policyholders. The white rate was, in short, less than double the colored. Not only was the rate for insured white persons lower than in the general population, but the rate for insured negroes was distinctly higher.

At first sight, it appears rather disconcerting that 156 of the 373 negro suicides, or 42 per cent of the total, were in the insured group, although they compose only about one-quarter of the negro population of the country. But, upon analysis, we find two very good reasons for this discrepancy.

First, the negro policyholders of the Metropolitan are almost exclusively city dwellers. It is well known that, throughout the world, suicide is much more frequent in urban centers than in rural areas. Among the negroes, as well as the whites, we find the same differential in favor of those living in rural districts. In the registration states of the United States in 1927 the urban rate was 9.6 per 100,000 for the colored as contrasted with 2.4 in the country districts. Nowhere is there more conclusive evidence of the favorable factors in rural living as regards suicide than in our southern states. For we find that suicide death-rates for southern states, as a whole, are very low; whereas, for the white population of southern cities, they are strikingly high.

The second item which explains the higher suicide rates of negro policyholders is that those insured in the Metropolitan reside, for the most part, in the cities of the north. In fact, over two-thirds of the insured are found in northern cities. It is not surprising to find, therefore, that of the 156 suicides in the year, 118, or 75 per cent, took place in northern cities. There is clearly a marked difference in status between negroes in the north and in the south. In previous reports we have pointed out the unfavorable health situation of those who have migrated from the rural areas of the south to the great industrial centers of the north. Suicide rates would likewise seem to be affected by the disorganization which accompanies such movements of population. Thus, among negro industrial policyholders, in addition to the greater strain which urban life exerts, there is added the adverse effect on health and stability of a change from the south to the north. Our studies point to the conclusion that the mortality of the negro is better in the south and especially better in the rural districts of the southern states. This analysis of suicide frequency only adds to the strength of that conviction and explains why the suicide rate for insured negroes is so much higher than for the negro population as a whole.—*Metropolitan Life Bulletin.*

Mortality from Automobile Accidents

The Department of Commerce announces that in the death registration area in continental United States accidents in which automobiles were involved caused 29,531 deaths in 1929 with a death rate of 25.4 per 100,000 population. Of this total, collisions of automobiles with railroad trains and with street cars were responsible for 1,958 and 507 deaths, respectively, which, if excluded, would leave 27,066 deaths with a death rate of 23.3.

The death registration area in 1929 was composed of 46 states, the District of Columbia, and nine registration cities in non-registration states, and included 95.7 per cent of the total population of continental United States. Assuming that the same death rate would hold true for the remainder of the continental United States, the number of deaths in 1929 from accidents in which automobiles were involved is estimated as 30,858 for the whole country, as compared with an estimate of 27,618 for the year 1928. These figures indicate an increase of over 3,000 deaths from this cause in a single year.

Comparing the states, the greatest number of deaths occurred in New York (3,192), followed by Pennsylvania (2,331), Ohio (2,320), and California (2,271). Nevada has the highest death rate per 100,000 population (51.1). Next in order are California (41.2), Arizona (36.2), Florida (35.5), Ohio (35.3), Indiana (34.1), and Wyoming (33.7).

It is gratifying to observe, however, that, if collisions with railroad trains and street cars are excluded, the following eight states had fewer deaths than in the previous year: Delaware, Idaho, Illinois, Montana, Oregon, Rhode Island, Vermont, and Wisconsin.

The number of automobile deaths reported for each state and city includes those due to accidents outside of the limits of the city or state. If these and collisions with railroad trains and street cars are excluded, the cities would rank as follows: New York with 1,328 deaths, Chicago 729, Los Angeles 390, Detroit 369, and Philadelphia 356. Other cities with over 100 deaths are: Cleveland 294, St. Louis 152, Pittsburgh 150, Baltimore 143, Buffalo 136, Boston 133, Cincinnati 121, Newark 121, Indianapolis 107, San Francisco 107, and New Orleans 103. Cities with the highest death rates per 100,000 population, however, are: Youngstown (42.4), Gary (40), Camden (37.8), Long Beach (36.7), Miami (35.7), Cleveland (32.9), Los Angeles (32.8), Canton (32.6), and Columbus (30.4). The lowest rate shown is that for New Bedford (7.9).

Chicago had the greatest number of deaths from collisions of automobiles with railroad trains (26)

and with street cars (30). Next in order are Gary with 14 deaths from collisions of automobiles with railroad trains, and Los Angeles with 19 deaths from collisions of automobiles with street cars.

An interesting phase of the report is the extent to which accidents outside of the city limits form of the total crude death rate. In the case of Albany, Camden, Fort Wayne, Grand Rapids, Hartford, Springfield (Mass.), and Trenton, the number of these accidents play a very important part in the total number of deaths from automobile accidents.

West Virginia Mortality in 1929

The Department of Commerce announces that there were 18,128 deaths in West Virginia during 1929, as compared with 17,507 in 1928.

No death rates for 1929 have been computed, because any rates based on population estimates made at this time would be unreliable and, probably, would have to be materially revised as soon as the 1930 census figures become available.

Marked increases are for whooping cough, which almost quadrupled the deaths of 1929 from this cause over 1928, and influenza and dysentery, which practically doubled their mortality. These three causes were responsible primarily for the increase in the total deaths, although less marked increases are shown for measles, diseases of the heart, pneumonia (all forms), and diarrhea and enteritis (under two years).

Decreases, even though general, were notable in scarlet fever, acute anterior poliomyelitis, tuberculosis (all forms), cancer and other malignant tumors, diabetes mellitus, nephritis, and homicide.

Among accidental deaths, decreases in 1929 were shown for drowning and shooting, but these were nearly balanced by the increase in deaths from automobile accidents.

The principal causes of death included: Typhoid and paratyphoid fever, 195; measles, 79; scarlet fever, 26; whooping cough, 230; diphtheria, 127; influenza, 1,439; dysentery, 69; tuberculosis (all forms), 1,184; syphilis, 205; cancer and other malignant tumors, 988; diabetes mellitus, 169; cerebral hemorrhage and softening, 1,026; paralysis without specified cause, 169; diseases of the heart, 2,135; pneumonia (all forms), 1,322; diarrhea and enteritis, 1,140; appendicitis and typhilitis, 176; nephritis, 1,196, and congenital malformations and diseases of early infancy, 1,492.

Medical Officers Needed

The United States Civil Service Commission states that government hospitals throughout the country, including those under the Veterans' Bureau, the Public Health Service, the Indian Service, and other branches, are in need of medical officers and nurses of various grades, and that Veterans' Bureau hospitals have vacancies in positions of psychiatric social worker and junior social worker.

Full information regarding examinations, salaries, etc., may be obtained from the United States Civil Service Commission, Washington, D. C., or from the secretary of the United States Civil Service Board of Examiners at the post office or customhouse in any city.

WOMAN'S AUXILIARY

Kanawha County

About twenty-five ladies from Charleston recently attended the bridge luncheon given by the Auxiliary to the Cabell County Medical Society at the home of Mrs. R. J. Wilkinson in Huntington. Mrs. W. C. Swann, of Huntington, newly-elected president of the State Auxiliary, assisted Mrs. Wilkerson in receiving the guests.

The first fall meeting of the Kanawha Auxiliary was held on the afternoon of October 21 at the home of Mrs. C. A. Ray, near Pocataligo. Mrs. O. L. Aultz, president, presided at this meeting, and a most interesting program was presented. A large number of members turned out for this occasion.

The Auxiliary Purpose

The following article by Mrs. Henry C. Haden, of Houston, Texas, strikes a timely note in the work of the medical auxiliaries. The article was recently published in the *Texas State Journal of Medicine* and was prepared upon the occasion of the twelfth anniversary of the Auxiliary to the Texas Medical Society. The article by Mrs. Haden is published herewith in full:

"On this occasion, which marks the twelfth year of our successful existence as an Auxiliary to the State Medical Association, and the fourth year of our inclusion in the program of the opening exercises, it is my privilege and pleasure to offer a greeting to this organization of physicians and wives of physicians. If recognition was slow in coming to us as an auxiliary, its value when it did come was en-

hanced by the eagerness with which we have tried to be of service to the State Medical Association.

The activities of the Auxiliary are threefold in purpose—social, educational, and philanthropic. It has accomplished satisfactory results in promoting cordial relations between the families of members of the constituent county medical societies of this Association. In those instances in which the Auxiliaries have met simultaneously with county medical societies, the attendance at the county medical society meetings has been very materially increased.

The public, as a whole, does not have an intelligent and sympathetic understanding of the traditions, aims and ideals of the medical profession. The Auxiliary helps to solve this problem by taking an active part in public health programs, always seeing that such programs are conducted in a way that meets with the approval of county medical societies.

Our ideal is to help educate the public in health matters. Our public health chairman sends out, each year, quantities of health literature secured from both the State Health Department and the American Medical Association. We place in the health centers, city schools, libraries, and rural schools, *Hygeia*, the authorized health publication of the American Medical Association.

We have asked our fellow club women of the state to include in the year books of their respective organizations at least one health program, with reputable physicians to make health talks. We are interested in all public health movements fostering activities concerned with annual physical examinations, vital statistics, child health, and tuberculosis. But, before giving our support to any agency doing health work, we are always sure that it is approved by the county medical societies and endorsed by them. We are especially interested in child health work. It is a fundamental need at the present time. There is perhaps no phase of health work which will yield larger dividends than the follow-up plans for the promotion of child health.

Our State Auxiliary this year has rendered a great service to the children of Texas by being instrumental in lowering the age limit for admission to the new children's ward of the state tuberculosis sanitarium at Sanatorium. We were asked last year by the house of delegates of the State Medical Association to use our influence with our senators and representatives to secure an appropriation for this hospital. This was accomplished, but, unfortunately, the age limit for admission to the institution was placed at twelve years. Realizing this would deprive great numbers of children in need of this opportunity to get well, we requested Senator Woodul, Senator Beck, and Dr. Davis of the State Health Department to submit the matter to the State Board of Control, with the statement that the women of Texas were back of a request to lower the age limit. As a result of this action, it was decided that children as young as six years would be admitted to this institution. We feel grateful that our senators and the Board of Control graciously did this, and the Auxiliary is happy that it was instrumental in securing this privilege for the tuberculous children of Texas.

This year we are again helping to put Texas in the birth registration area by assisting Dr. Davis, of the Vital Statistics Bureau, in a more definite way. We have appointed a special representative in each county where there is an Auxiliary, whose duty it is to first inform herself of the law providing for birth registration, then to call upon the registrars, explaining to them not only the law but its importance, and finally to check up the records in order to locate those births which are not filed. When the list of the unfiled birth records is secured, letters are addressed to the medical attendants, insisting that not only these births be registered, but that in the future all births be reported. Of course, this is not necessary in cities where health departments are well organized, but in the rural districts, where birth registration is markedly short of what it should be, Dr. Davis feels that this plan will be of great help to him.

The State Auxiliary this year has succeeded in securing much data for a history of Texas medicine. This also was done at the request of the State Medical Association. Each county auxiliary throughout the state conducted in its year's activities an "Historical Day Program." The data collected were sent to Mrs. S. C. Red, of Houston, who was asked by the Auxiliary to compile a book on "A History of Early Medicine in Texas." The first several chapters have been completed and the book will be ready for the press early in July. The pioneers in medicine in Texas worked under great disadvantages and suffered many hardships. It seems only fitting that we should know their records and honor their memory. We, the wives of physicians, are happy that we have been able to accomplish this.

We wish to express our appreciation to the State Association for the courtesy extended in giving us a share in this splendid program. But, after all, why shouldn't we have a part? We are one, for the objects we have at heart are the same, and our chief interest is in furthering them.

MONTHLY MORBIDITY REPORT

BY COUNTIES

SEPTEMBER, 1930	Chickenpox	Diphtheria	Influenza	Measles	Poliomyelitis	Scarlet Fever	Smallpox	Trachoma	Tuberculosis, All Forms	Whooping Cough	Typhoid Fever
Barbour	----	2	----	----	----	----	----	----	----	----	18
Berkeley	----	----	----	----	----	----	----	----	----	----	2
Boone	----	5	----	----	----	2	----	----	----	14	5
Braxton	----	1	----	----	----	----	----	1	1	----	3
Brooke	----	----	----	----	----	13	----	----	----	1	4
Cabell	----	2	----	2	----	10	----	----	----	7	3
Calhoun	----	3	----	----	----	----	----	----	----	----	----
Doddridge	----	----	4	----	----	----	9	----	----	1	1
Fayette	----	8	----	10	----	7	4	----	2	----	8
Gilmer	----	----	----	----	1	2	----	----	----	2	----
Grant	1	----	----	----	----	----	----	----	----	----	----
Greenbrier	----	----	----	----	----	----	----	----	----	1	2
Hampshire	----	----	----	----	----	----	----	----	1	----	6
Hancock	----	----	----	1	----	4	----	----	1	----	----
Hardy	----	----	----	----	----	1	----	----	----	----	2
Harrison	4	5	----	----	----	12	----	----	----	7	9
Jefferson	----	----	----	----	----	----	----	----	----	----	1
Kanawha	----	2	----	2	1	15	----	----	17	5	22
Lewis	----	1	----	----	1	----	----	----	----	1	8
Lincoln	----	1	----	----	----	----	----	----	1	1	6
Logan	----	1	----	----	----	1	1	----	----	2	12
Marion	2	4	----	2	2	14	----	1	2	----	10
Marshall	----	5	----	----	----	4	----	----	----	----	3
Mason	----	----	----	----	----	----	----	----	----	----	2
Mercer	----	----	----	----	----	----	----	----	----	----	8
Mineral	----	1	9	----	----	5	----	----	5	15	2
Mingo	----	5	----	----	----	1	----	----	----	----	5
Monongalia	1	3	----	7	----	4	----	----	----	----	10
Monroe	----	1	----	----	----	----	----	----	----	----	----
Morgan	----	----	----	----	----	2	----	----	----	----	1
Nicholas	1	7	----	----	----	2	1	----	----	----	1
Ohio	1	----	----	----	2	3	----	----	7	2	1
Pleasants	----	----	----	----	----	1	----	----	----	----	----
Pocahontas	----	1	1	----	----	----	----	----	----	----	2
Preston	----	----	----	----	----	----	----	----	----	----	12
Putnam	----	----	----	----	----	----	----	----	----	----	3
Raleigh	----	18	----	----	----	1	----	----	----	----	13
Randolph	----	----	----	----	----	----	----	----	----	----	1
Ritchie	----	----	----	----	1	----	----	----	----	----	----
Roane	----	----	----	----	----	1	----	----	----	----	----
Summers	----	----	----	----	----	----	----	----	----	----	4
Taylor	----	----	----	----	----	----	----	----	----	----	15
Tyler	----	----	3	----	----	----	----	----	----	4	
Upshur	----	----	----	----	----	----	----	----	1	2	7
Wayne	----	1	----	----	----	----	----	----	----	----	11
Webster	----	1	----	----	----	----	----	----	----	----	----
Wetzel	----	2	----	----	----	----	----	----	----	----	4
Wirt	----	----	1	----	----	1	----	----	----	----	1
Wood	----	1	----	----	----	2	----	----	----	----	10
Wyoming	----	----	----	21	----	----	----	----	----	----	2
TOTALS	10	81	18	45	8	108	15	2	38	65	240

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UPPER RESPIRATORY TRACT INFECTIONS IN INFANTS AND YOUNG CHILDREN *

By JAMES B. STONE, M.D.
Richmond, Va.

Infections of the upper respiratory tract occur with great frequency in infants and young children. As a rule, the younger the child the more severe the symptoms, and, in infancy, a condition that may have appeared trivial in the beginning often leads to a serious and, at times, a fatal termination.

These infections are not, as a rule, sharply localized, but begin somewhere along the nasal or pharyngeal passages and tend to spread over these surfaces to include tonsils, tonsillar pillars and nasal sinuses, and frequently extend into the middle ear.

The effect of these conditions can not be estimated solely in terms of the acute local condition, but must be considered also in the light of possible complications and sequelæ. Of the local complications, infection of the middle ear and acute cervical lymphadenitis are probably the most common. Acute laryngitis, acute and chronic bronchitis, bronchopneumonia, and mastoiditis are also in the great majority of cases secondary to acute or chronic infection in the region of the nasopharynx.

Systemic effects may be severe and of a serious nature. Nose and throat infections constitute one of the frequent causes of nephritis in children. Pyuria, indicating infection along the urinary tract, and most often in the kidneys, is seen during or following infections of the nose and throat with sufficient frequency to suggest a causal relation. Acute rheumatic fever, infectious arthritis, and acute endocarditis have long been associated etiologically with disease of the tonsils or nasal sinuses. Recurrent vomiting, acute diarrhea in infants, secondary anemia, and nutritional disorders may often be traced to the same source.

The foregoing brief sketch gives some idea of the significance of infections of the upper respiratory tract in the young. In view of the complications and sequelæ occurring in the course of time as a result of these conditions, more serious consideration should be given to what is often lightly referred to in the beginning as "just a cold in the head."

This paper does not offer anything original in the handling of these cases, but its purpose is rather to call attention to and to emphasize some of the simple general measures that can be counted on to reduce the incidence of this type of illness. In our zeal for short cuts and spectacular results by easy methods, it often happens that too little attention is given to the fundamental laws of health, with the result that the body falls victim to various diseases that might have been avoided. In the young this is especially true of infections of the upper respiratory tract, with their immediate and remote complications.

In order for infection to take place, two conditions must be satisfied. First, virulent microörganisms or

* Read before the Cabell County Medical Society, October 9, 1930.

a disease-producing virus must be present; and, secondly, there must be some local or general lowering of the body resistance—either absolute or relative. In infections of the respiratory tract various organisms have been indicted, though the exact significance of the individuals is not settled. The staphylococcus, streptococcus, micrococcus catarrhalis, influenza bacillus, and an unknown virus not yet isolated have, individually or in combination, been commonly assigned the causative rôle. The conditions variously termed acute pharyngitis, nasopharyngitis, tonsillitis, head cold, sore throat, grippe, influenza, and so on, are not sharply demarcated clinically in infants and children. In the absence of an epidemic, it is usually impossible to say with certainty whether a young child has a "head cold," influenza, or grippe.

The organisms mentioned may be endogenous or exogenous. Many of them are constantly present in the nose and throat of healthy individuals, and illness occurs only when, for some reason, there is a lowering of the individual's local or general body resistance. On the other hand, the healthy individual, without any decline of his normal resistance, may have his defense mechanism broken down by a massive infection acquired from some outside source.

A. GENERAL PREDISPOSING CAUSES

Of the predisposing causes that are concerned in upper respiratory tract infection in children, there are to be considered general influences arising in connection with the individual child, and those arising from environmental conditions.

1. *The Individual.*—As regards the individual, some writers speak of an hereditary tendency to infections of the upper respiratory tract. Others question the influence of heredity, except in so far as it may affect the bony anatomy of the nose and throat and adnexa. It is reasonable to suppose, for instance, that a small nasopharyngeal space might be a family trait and any marked narrowing of the air passages would probably predispose to infection.

Whether or not heredity plays any part in the above sense, there is no question about the existence of many physically subnormal children. These, either through heredity or through improper care in infancy, have a lowered vitality and fall easy victims to all infections to which they are exposed. To this group belong a certain number of those children who suffer from chronic anorexia and malnutrition and in general fail to thrive, and do not grow or gain in weight and strength according to the usually accepted standards.

From the standpoint of nutrition, the well-nourished child is usually a healthier child than the undernourished and has a higher threshold of resistance to infectious diseases. Good nutrition implies not only absolute weight in pounds, but good color, clear skin, firm muscles, and strong bones, all of which lead to increased body resistance.

2. *Environment.*—Of environmental factors predisposing to respiratory tract infections, damp, changeable climate and the dry heating systems of many houses are probably the most important. In regard to climate, the changeable character, rather than protracted cold or dampness, plays the greatest part in breaking down the body defenses.

Most present-day houses, especially apartments, are not only overheated but the heating is such as to produce excessive dryness of the air. The consequence is local lowered resistance of the respiratory mucous membrane and lowered general resistance. Frequent changes of the surrounding temperature, consequent upon going in and out of dry, overheated buildings, no doubt plays a part in the incidence of respiratory infections. Of other unhygienic influences may be mentioned poorly ventilated sleeping quarters, too little outdoor life, and improper clothing.

B. LOCAL AND SPECIAL PREDISPOSING CAUSES

Of the local predisposing conditions inherent in the infant or young child, the anatomical peculiarities of the nasopharynx and adjacent structures are conducive to more severe symptoms when inefction occurs than is true of the older child or adult. The nasopharyngeal space is relatively small and the eustachian tubes large. The former condition leads to more marked obstruction in the presence of a slight inflammatory swelling, and the large size of the eustachian tubes facilitates extension of the infection into the middle ear.

Probably the most important local factor predisposing to infections of the upper respiratory tract is diseased tonsils and adenoids. Much enlargement of these structures brings about, to a marked degree, the obstructive symptoms already mentioned. In addition to the purely local condition, this obstruction, by interfering with the normal aëration of the lungs and oxygenation of the blood, leads to digestive disturbances and severe nutritional disorders. The latter, in turn, cause a lowering of the general body resistance, and so greater susceptibility to infection.

Rickets leads to chest deformities and changes in the bony structures about the upper air passages. As a result, there is interference with normal respiration and a general lowered resistance. It is well known

that infants and young children with severe rachitic conditions are especially prone to respiratory diseases.

Constipation and an inadequate diet, especially a diet containing an excess of sweets and a deficiency of the vitamin-containing foods, are both factors conducive to lowered resistance and increased susceptibility to infections.

C. PRECIPITATING CAUSES

The precipitation of acute respiratory attacks in children can usually be attributed to one or more of several influences that serve to break down the body's defense mechanism. Chilling of the body surface, local or general, is known to be a potent factor. The precise method in which this operates is not settled, but it causes a definite lowering of resistance of the respiratory mucous membrane so that infection takes place. In case of the small infant, the same result may be produced by the direct chilling of the respiratory mucosa through the breathing of extremely cold air, even though the body may apparently be well protected.

The above influence is rather generally recognized. A very important factor, and one that is often overlooked, is the effect of fatigue. Too much stress can not be placed on the importance of fatigue. Because of its effect on the child's nutrition and growth, and the development of a stable nervous system, it is one of the important predisposing causes of infections and various functional disorders. The immediate effect of fatigue is to lower the threshold of resistance and render the child an easy victim to pathogenic microörganisms.

Exposure to massive infection may serve to break through the defense of the healthiest infant or child. In the case of the normal well-nourished child this is probably the most frequent mode of contraction. Direct exposure, either in the home or elsewhere, to large numbers of virulent pathogenic infectious organisms is a menace against which all possible precautions should be taken. Devoted parents and relatives, either as carriers or actually suffering from chronic foci of infection themselves, are no doubt unwittingly the source of serious infections in younger members of the household. The lay adult with a chronic sinus infection rarely realizes that the organisms being harbored may cause other clinical types of respiratory disease, and takes too few precautions to prevent dissemination of the infectious secretion.

On the other hand, frequent contact with infectious organisms of a low degree of virulence and in small numbers probably stimulates the formation of antibodies and ultimately results in a higher degree of resistance to more virulent organisms. For this reason, too close restriction to the extent of always keeping the child at home, and entirely separated from others, may interfere with the development of immunity along natural lines. Excesses in the matter of either exposure or shielding are both bad.

Gastrointestinal disorders are not only a frequent sequel to inflammation of the upper respiratory tract, but may, by lowering the child's resistance, be either a predisposing or precipitating cause of the respiratory infection.

D. PREVENTIVE TREATMENT

The most effective and important treatment for these respiratory infections is in the realm of prevention.

Allergy and the specific infections, such as measles, whooping cough and the like, are not considered in this paper.

Unfortunately, reliable specifics against the type of respiratory disease under discussion have not yet been brought to light. Vaccines have given varying results in the hands of different workers. Although at times reported to have given good results, such are by no means uniform and the value of their general use is open to question. Autogenous vaccines are probably preferable to the stock ones, if any are to be used.

Lacking any reliable specific means of giving protection against respiratory infections, preventive treatment becomes primarily a matter of removing the predisposing causes and of keeping the child in such good general condition as to give him an effective resistance against the ordinary exposures that are inherent to living in a germ-laden environment, and of avoiding exposure to massive doses of virulent pathogenic infectious material.

Local pathological conditions in the nose and throat should be corrected. Diseased tonsils and adenoids should be removed, but indiscriminate removal is not to be advised. Slight enlargement of these structures does not necessarily mean disease, and when in a healthy state they probably serve as a first line of defense against the entrance into the body of pathogenic organisms. When enlarged enough to mechanically obstruct breathing and interfere with swallowing, or when infected to such an extent that they act as distributing foci rather than as an aid to the body's defense, they should be removed. Many authorities advise removal in all children who have had rheumatism, endocarditis, pericarditis, or nephritis, when other causes for these

conditions can not be found. Recent reports by Kaiser, who made detailed observations on large groups of children over a long period of time, indicate that removal of tonsils and adenoids lessens the frequency of head colds and otitis over a period of several years following the operation, and reduces the incidence of sore throat and cervical adenitis over a much longer period.

Simply looking at a child's throat, however, without taking into consideration other data to be obtained by a careful history and complete physical examination, does not usually give sufficient information to justify advising removal of tonsils and adenoids. Such a casual examination is insufficient evidence for making a decision as to whether these structures are diseased to the point of being no longer useful.

The question of diet and hygienic management is important. In regard to diet, good eating habits should be established from the earliest age. Regular feeding hours, established in infancy and continued into childhood, will go far toward elimination of the all too frequent complaint of anorexia. This paper can not go into a detailed discussion of infant and child feeding, but a few common errors must be mentioned. Among the children with low resistance, irregular feeding with an excess of sweets in the dietary is a common finding. This fact is often not appreciated by the mother until the plan is adopted of having her write down in detail exactly what the child eats and when, through several twenty-four-hour cycles. The irregularities then come to light. It often happens that when the child doesn't eat at his mealtime, and, an hour or two later, suggests that a heavily sweetened milkshake, piece of cake, fruit or candy would be acceptable, the mother is so overjoyed at signs of hunger that she immediately rushes to satisfy his request, with the result that little or nothing is eaten at the subsequent regular meal. This vicious circle continues, and all too often the food consumed is not only inadequate from the standpoint of calories, but is almost entirely lacking in the essential elements for the building of strong, healthy bodies. With elimination of sweets and excessive seasoning, and in the absence of outside interference on the part of attendants and relatives, there would be a marked reduction in the ranks of the children who refuse to eat. The recent work of Dr. Clara Davis on the self-selection of food by infants throws interesting light on this phase of the problem.

During the last few years much work has been done and much has been written concerning the relation between vitamins and disease. Much is still to be learned on this subject, but experimental work has already shown their importance in the maintenance of health. The fat-soluble vitamin A has been called the anti-infective vtiamin. Deficiency of this substance in the diet seems in some way to result in a weakening of the body resistance and an increased susceptibility of bacterial invasion. Work by Daniels and Armstrong showed that omission of vitamin A leads to sinus and mastoid infection in experimental animals. It is known to occur in large amounts in dairy products, eggs, liver, and leafy vegetables, especially those containing green or yellow pigment. It is very important that a liberal amount of these articles be included in the child's daily food.

Water-soluble vitamin B, formerly called the anti-neurotic vitamin, is now thought to be a complex composed of two independent vitamins. Among other properties of the vitamin B complex, it is thought to be essential for the maintenance of appetite and growth, and the proper functioning of the digestive tract; consequently it is of importance to the child from the standpoint of nutrition and the promotion of resistance to bacterial infection. Vitamin B is widely distributed in the plant and animal foods, occurring especially in milk, the bran layer of cereals, citrous fruits, vegetables, liver, kidneys, and yeast.

Vitamin C has long been known as the anti-scorbutic factor. Besides its apparently specific effect in the prevention of scurvy, deficiency of this vitamin has been shown to result in lack of stamina, failure to grow normally, and, either directly or indirectly, results in less resistance to infectious diseases. Citrous fruits and many of the fresh green vegetables are rich sources of this vitamin.

Vitamin D is well known as the anti-rachitic vitamin. Whether due to the bony deformities of the chest and of the structures around the upper air passages, or due to a generally lowered vitality, the rachitic infant or child is especially susceptible to respiratory infections. Cod-liver oil is one of the best of the known natural sources of both vitamins A and D. Liver and egg-yolk are also rich natural sources of the same vitamin.

Irradiated ergosterol, under the name of viosterol, now supplies us with vitamin D in a much more concentrated form than is known to occur in nature. The favorable anti-rachitis effects of exposure of the

skin to sunlight or artificially produced ultra-violet light is thought to be due to the irradiation of the ergosterol in the skin. Powerful as is viosterol in the prevention of rickets, it does not completely take the place of cod-liver oil in the promotion of the infant's or child's health. It is unfortunate that many lay persons, and apparently some physicians, have the idea that viosterol is the same as, or equivalent to, cod-liver oil. Cod-liver oil, containing the anti-infective, growth-promoting vitamin A as well as the anti-rachitic vitamin D, is, in the light of present knowledge, a much more potent agent than viosterol in promoting normal growth and development and in the prevention of infectious disease.

From the standpoint of health, then, it is most important that the diet of the infant and young child contain a liberal amount of the vitamin-containing "protective" foods exemplified by dairy products, green vegetables, whole-grain cereals, and citrous fruits, and that these be reinforced with cod-liver oil. If cod-liver oil is not tolerated by the infant, then viosterol or some other source of vitamin D, such as ultra-violet light, natural or artificial, should be substituted.

Of hygienic measures, rest, sleep, fresh air, sunshine and exercise are all important and should be emphasized just the same as proper food. Although the health value of these measures is known, in a way, to most people, it often happens that in actual practice they are neglected in the search for less prosaic and more spectacular, though more costly and less effective, procedures.

Long hours for sleep at night and, until at least five years old, a rest period in the middle of the day should be required of every child. Many children of the runabout age, if good habits have not been cultivated from infancy, will rebel against these hours of inactivity which are so important from the health angle. Nevertheless, if enforced with regularity, the result is not only a more healthy and a happier child, but a less harrassed mother.

Fresh air and sunshine are Nature's tonics, and should be utilized to the fullest degree. The child who leads an outdoor life has far greater powers of resistance than the unfortunate one who is allowed to stay closely housed. Exercise in the open air, short of fatigue, should be encouraged at all times. Besides the general tonic effect, this serves to stimulate deep breathing with better ventilation of the lungs, and produces a respiratory tract with greater resistance to infection.

In good weather the infant or child needs to be kept out of doors as much as possible, and when it is warm the clothing should be of the scantiest kind. Exposure of the bare skin to the sun and air during the warm months does much to build up resistance and lessen susceptibility to "colds" that so often result from a current of air blowing on the body of the child who has been too closely housed.

A word of caution needs to be added here for those too-zealous mothers who, in their enthusiasm for fresh air, overexpose young infants when weather conditions are unsuitable for the outdoor airing. In extremely cold weather, especially if windy or damp, young infants will be better off if given their airings in a light room with open windows than if taken out and subjected unnecessarily to the cold and probably chilling effects of inclement weather. Too much exposure is just as bad as too much indoor life and too much clothing.

Chilling of the body surface by too little or too much clothing or by other means, whether in summer or winter, has already been mentioned as one of the precipitating causes of upper respiratory tract infections. Clothing should be adjusted to meet the climatic conditions—enough to keep the child comfortably warm, but not in a perspiration. All children do not require the same amount of clothing, and in a changeable climate variations in wraps need to be made to meet the prevailing weather condition. No hard-and-fast rules can be laid down, but judgment needs to be exercised in the individual case. Lack of good judgment in regard to adequate clothing is no doubt responsible for a great many of the infections of the upper respiratory tract seen in children. In cold weather, especially if windy, chilling may be due to insufficient clothing, including head covering; whereas, on the other hand, in either cold or warm weather it may result from too much clothing. Excessive clothing leads to perspiration, especially when at play, followed by chilling when the child becomes inactive.

The same end-result may be brought about, even in warm weather, when the child, moist with perspiration, stops in a draft or sleeps under an electric fan, or is taken for an automobile ride, or if in other ways his body surface is subjected to a sudden change of temperature while he is in an inactive state.

A simple mistake that is often made in cold weather is for the mother or attendant to dress the infant or child in its heavy wraps, preparatory to going out, and then have it wait in a warm room while she puts on her own wraps or attends to other

duties. During the interval the child becomes wet with perspiration and is promptly chilled when taken out into the cold.

There is the same need for discrimination in regard to the bed clothing at night. This, as in the case of wearing apparel, needs a certain amount of variation in individual cases. It should be enough to keep the child warm without making him uncomfortably so. In the latter case, the covering is liable to be thrown off during the night and a "cold" results.

Sleeping rooms should be well ventilated, but extreme cold is contraindicated in case of the infant or very young child. For the very young infant the room temperature at night should be maintained at practically the same point as during the day. Failure to observe this precaution frequently leads to chilling during the night and a resulting nose cold or sore throat. There is considerable confusion in the minds of some mothers regarding the difference between cold air and fresh air. A cold, tightly closed sleeping porch is no more conducive to health than any other tightly closed room.

Avoidance of constipation is a matter of considerable importance. The failure to cultivate regular stool habits and the resultant constipation constitutes a real menace to the maintenance of good health. This function is often neglected, and the excessive accumulation of waste matter in the intestinal tract definitely interferes with proper digestion, contributes to anorexia, helps to bring on intestinal disorders, and results in a lowering of the normal body resistance. It serves both as a predisposing factor and, at times, in combination with other adverse conditions, becomes an immediate precipitating cause of infections of the upper respiratory tract. Every effort should be made from early infancy to prevent the development of this condition. This is to be accomplished, not by cathartics, but primarily by cultivation of regular stool habits and by properly regulating the diet. Occasionally mild laxatives, such as milk of magnesia, mineral oil, or one of the mild senna-containing preparations, may be needed; but, usually, habit formation and diet regulation are sufficient.

Exposure to massive infection by intimate contact with adults or other children suffering from respiratory infections should be scrupulously avoided.

E. CURATIVE TREATMENT

If, despite the preventive measures discussed, an acute infection of the nasopharyngeal region does occur, much can be done to prevent the development of complications and the establishment of a chronic condition, by recognizing the potentialities of the infection and instituting at once a line of treatment that will conserve the child's strength and bolster up his powers of resistance.

The infant presumably is already in bed; the child should be put there at rest and kept there for at least twenty-four to forty-eight hours, or until there is a definite improvement. If there has been fever, this period in bed should be continued through at least two days of normal temperature. This prompt bed treatment will do much to help the child get the upper hand of the fight against the infectious organisms, and will often prevent a severe illness and disagreeable or even serious complications. By rest in bed is meant absolute rest, and not a continual getting in and out of the bed or being, in turn, under the cover, on top of the cover, standing up and running around the bed, or being intermittently held in some one's lap. Such bed treatment is probably worse than none, and only tends in the long run to irritate the child—first as a result of the partial restriction, and then because of the aggravation of symptoms resulting from the inadequate treatment.

The young child, or even the infant, who has been properly handled and trained will not rebel against this procedure, and those who have not been well trained will, after a brief period of tactful but firm handling, discover the increased comfort of being at rest and will become happily reconciled to the bed treatment. This may seem more easily said than done, but, although some difficulty may be encountered at first, the end results to be obtained are more than sufficient recompense for the extra work and effort involved at the beginning of treatment.

Besides the bed care, other treatment is largely of a symptomatic and hygienic nature. Mild sedatives to insure rest and sleep, without too much depression, are usually indicated. For this purpose, small doses of such drugs as aspirin, bromides, antipyrine, Dover's powder, or one of the barbituric acid derivatives, are useful. At times, if there is much cough, small doses of codein or paregoric may be indicated. If the nasal discharge is profuse, atropine, judiciously given, will greatly increase the child's comfort. The secretion of mucus may be regarded as Nature's effort to throw off the irritating infection. Atropine should not be given for the purpose of completely arresting this conservative process, but only to the extent of holding it in check sufficiently for the annoyance to the child not to overbalance

the probable good effect of Nature's removal of the irritating matter.

In the acute stage, the use of mild astringents in the nose facilitates breathing, gives increased comfort, and probably lessens the chances of the infection extending into the ears and accessory sinuses. For this purpose, dilute oily solutions of ephedrine, adrenalin, or menthol and camphor are useful. The colloidal silver preparations, such as neosilvol or argyrol, in five to fifteen per cent solution, may be similarly used in small amounts, though the direct germicidal effect to be obtained by them has probably been overestimated. These drugs may be administered by instillation into the nasal cavities with a medicine dropper, or, in the case of the older child, an atomizer may be used. If an atomizer is used, care needs to be exercised not to force the infection into the middle ear or sinuses as the result of too much pressure being produced by the atomizer nozzle blocking the back flow of air, in case the nasopharynx is obstructed.

After the acute stage, prolonged use of the above drugs is not advisable, as the continued astringent action, with consequent diminution of the normal blood supply, probably lowers the local resistance of the mucous membrane. If something is needed over a long period of time to prevent plugging of the nasopharynx in the infant or small child, plain mineral oil may be used with less chance of local injury to the mucosa. For example, experimental work done on the prophylaxis of infantile paralysis has indicated that, at least in monkeys, the use of antiseptics in the nasal cavity increased the susceptibility to that virus.

In the case of older children who have acute tonsillitis or severe inflammation of the pharyngeal region, irrigation of the throat with hot saline by the gravity method gives much comfort.

Acute infections about the nose and throat are often accompanied by considerable gastrointestinal disturbance. For this reason, the diet should be reduced in the early stages. For the infant the formula needs to be diluted, while the younger child should temporarily be put on a liquid diet. The appetite is usually poor at this time, and food should not be forced. Water should be given freely and the taking of large quantities should be encouraged. As the appetite improves, food is to be increased gradually. The omission of sweets usually leads to an earlier return of a normal appetite.

Laxatives should be given as needed to secure a daily movement of the bowels. Repeated drastic catharsis is contraindicated, as it only serves to weaken the child.

Attention to the temperature, ventilation, and the humidity of the room is important. The air should be fresh but comfortably warm. Very cold air or warm, dry air are both bad in this type of infection.

A room temperature of 68° to 70° is desirable, and in cold weather some means of artificial humidification is usually needed. A simple means of providing the latter is to keep water steaming in the room. For this purpose, a small electric heater of some kind, on which a kettle or basin of water can be kept simmering, works admirably. Oil stoves are objectionable on account of the fumes. When there is a laryngitis, bronchitis, or severe throat cough, the increased comfort to be secured by this simple procedure is remarkable.

When there is an acute bronchitis with cough, the old-fashioned mustard plaster will often give much relief. Incidentally, experiments done on rabbits have shown that a limited stimulation of the skin by mustard or other irritants led to increased bactericidal power of the blood.

Convalescence.—When the acute stage has passed and the period of bed treatment is over, the further care during convalescence will depend on the season of the year. During cold weather the infant or young child should be kept in the house as long as there are present any abnormal physical signs in the chest or any inflammatory condition of the nose and throat. They should not be allowed to go in public places or mix with other children until these conditions have cleared.

This may seem like an unnecessary restriction on the child's outdoor life, but, in the long run, it is the wisest course to follow and will result in less time being spent indoors. Going out into the cold air too soon, before the inflammatory condition has completely subsided, is responsible for many protracted winter coughs and so-called "recurrent" colds. The latter are often simply a continuation of the original infection, which has never cleared and which is fanned into an active state by too early exposure to cold or windy weather.

Failure to observe this simple precaution is likely not only to lead to chronic infection of the nasopharynx but often results in prolonged and serious complications, especially acute and chronic otitis media, chronic sinus infection, chronic bronchitis, frequently occurring laryngitis, and, at times, mastoiditis and pneumonia. Less frequently, as a result of these chronic infections, acute arthritis, acute

endocarditis, acute nephritis, and other systemic complications occur, many of which might have been avoided by more patience and a little more prolonged care during convalescence from the original acute infection of the upper respiratory tract.

SUMMARY

To summarize briefly what has been said:

The frequency of infection of the upper respiratory tract in infants and young children, the immediate disabling effect, and the immediate and remote complications and sequelæ should lead to the exercise of greater care in the prevention and treatment of these conditions.

Preventive work, directed toward the predisposing causes, should include correction of gross pathological conditions of the nose and throat, correction of unhygienic surroundings, and the institution of such measures as will tend to improve the child's nutrition and general health. To the latter end, good health habits are to be cultivated with special attention to the subject of rest, sleep, and a substantial diet containing liberal amounts of the "protective foods." Especially to be avoided are chilling of the body surface, excess of sweets in the diet, excessive fatigue, constipation, and direct exposure to massive exogenous infection.

Active treatment of the acute case should include rest in bed, hygienic care, and such symptomatic measures as will give greatest comfort to the child and so make for an increase in his natural resistance.

Convalescent care is extremely important, and, if properly carried out, will prevent the development of many of the recurring and chronic respiratory infections and, sometimes, serious complications.

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THE MILD HYPOTHYROID *

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The recognition of the part played by the thyroid gland in certain forms of lowered metabolism is not new; however, those historical studies in the past deal only with the far advanced cases of myxedema and cretinism.

In 1874, Gull published his classic monograph on a cretinoid state supervening in adult life of women.

During 1885, Schiff transplanted the thyroid gland into the abdominal wall and initiated the treatment of thyroid deficiency by giving thyroid gland.

In 1895, Magnus-Levy reported that administration of thyroid preparations raised the rate of both oxygen and carbon dioxid exchange through the lungs, and, in 1904, in a report on myxedema, he pointed out the principles of interrelationship between thyroid activity and basal metabolism. In four patients without myxedema, he was able to increase the total metabolism by the administration of thyroid gland, while in five other subjects no such effect was observed. In every case of myxedema, however, it was found that the total metabolism was increased by thyroid treatment. He noted that the effect was apparent within the first week, gradually increasing over a period of four to five weeks, and that the metabolism fell to the previous level within two to three months after thyroid was discontinued. All recent work has verified Magnus-Levy's observation of the fact that the metabolism in myxedema is always elevated by vicarious thyroid therapy, provided it can be brought into the circulation.

It is my pleasure to discuss with you, tonight, some of the symptoms and findings encountered in that class of individuals, mostly females, who suffer from many physical and mental disturbances, all because of the lack of sufficient activity of the thyroid gland.

Medical literature of recent years has abounded with articles dealing with the overactive thyroid. So much has been written, dealing with the various modes of treatment, that one is necessarily left in a state of confusion in treating a true state of hyper-

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thyroidism. It is, therefore, refreshing to deal with a phase of the thyroid gland that comparatively little has been written regarding, and about which still all are in perfect accord as to the proper treatment. My excuse for bringing this subject to your attention is to remind you of that state known as mild hypothyroidism.

We are all familiar with true myxedema and cretinism; but little effort or skill is required in recognizing either. There is, though, a class of patients who consult us not infrequently, and, from year to year, mostly females who complain of many nervous and mental symptoms until one almost has a mental collapse at sight of them in the reception room on a busy day. I often wonder if Job, in his palmy days, could have had the patience to listen to them without showing fatigue. We classify them under neurotics, neurasthenics, psychasthenia, vagotonia, constitutional diatheses, and other meaningless terms; give them some medicine and lots of advice, only to have them return with the same complaint or one still worse. I believe that some of these cases are true hypothyroids. Observation for a number of years has convinced me that mild hypothyroidism is encountered more frequently than is generally supposed, and will remain unrecognized unless special methods, other than clinical signs, are used. I believe, though, that all of these cases show definite and positive symptoms if we look for them.

Personal observation has convinced me that the majority of these cases will show a history of obesity in early life; most of these patients, when observed during adult life, being distinctly below their normal standard of weight. This, of course, does not apply to far advanced cases, such as myxedema. Because of the general belief that hypothyroidism and obesity are always associated, this is a very important fact to remember.

A very constant fact noted in nearly all of these cases of long standing is a tendency to contract infections and an inability to throw them off. This is especially noticed in nose and throat affections—most of the long-standing cases observed by us had been treated for years by competent specialists in this line, without benefit. This is becoming so well established in our section that rhinologists are referring cases with recurring nasal infections for metabolism tests.

Dry, deadlike hair is usually present. The skin is generally dry; these patients rarely perspire, even upon exercise in hot weather. Pigmentation of the skin, referred to in the literature, has not been observed by us except in advanced cases.

Cold extremities is a symptom always present. These people never get warm except by artificial means; this being in direct contrast to the hyperthyroid type, who is always warm, perspires freely, and can not remain long in a close room.

Nervousness, both local and general, is usually present. Headache, constipation, poor appetite—the patient rarely caring for more than one meal a day and seldom eating breakfast. Subnormal temperature is almost constant; the pulse rate, though, is of very little value—it is just as likely to be rapid as slow or normal; in fact, most of the cases that are referred to us have had a clinical diagnosis of hyperthyroidism.

Focal Infection.—Possibly the best way for you to visualize a mild hypothyroid condition is to compare it with chronic focal infection. Both usually show a metabolism rate below normal; the symptoms are about the same in both conditions. The two are frequently associated, and it, therefore, requires a great deal of skill at times to determine which is primary. Certainly one can say, without fear of contradiction, that a great many cases of chronic focal infection will not show imporvement from the usual methods of treatment unless thyroid therapy in some form is used; while it is equally true that many other cases, with identical symptoms and findings, will be made distinctly worse even when given small doses of thyroid.

The basal metabolism rate is of the greatest value in the diagnosis and treatment of hypothyroidism, but can not be considered an absolute criterion. It would seem, though, that patients presenting the usual symptoms seen in hypothyroidism should have a basal metabolism determination as an aid to diagnosis.

Th most frequent presenting symptom in these cases is a subefficient bodily condition. The most frequent complaint in the cases seen by us, and which caused them to seek relief, was generally described as weakness, chronic fatigue, lack of ambition, or nervous exhaustion. A majority had headache, worse at time of menses. The menses are usually regular and normal except for the headache. Regardless of the symptom for which they seek relief, there is always one characteristic feature in the history of the hypothyroid patient—subefficiency of the bodily machine. Somewhere in the story there will be a background of inefficiency, generally physical, and, in cases of long duration, mental as well.

It is apparent that there is an abundance of clinical features in hypothyroidism, which should render the diagnosis relatively easy. The principal difficulty lies in the identification of early and atypical cases, and in these the determination of the basal metabolism rate is of the greatest value. Slightly lowered rate, however, is not sufficient evidence for a diagnosis of primary hypothyroidism, unless supported by definite physical findings. We would consider a diagnosis of hypothyroidism very questionable, even with a reading of as low as minus-twenty, unless there are definite physical findings.

Formerly, any case that showed a reading between plus 10 and minus 10 was considered normal; this has given away to plus 15. We are convinced that readings of minus 5 to 10 are more significant than those showing plus 10 to 15. Another significant fact is that any mechanical error made during the test may cause an increased reading; never, though, a decrease.

Nephritis is frequently associated with hypothyroidism, especially those moderately far advanced. I have seen two cases referred to the hospital by capable men, with a diagnosis of advanced nephritis with marked edema. Both showed a very low metabolism rate. They are both now at work, free of all symptoms—the result of thyroid therapy. It would seem best to keep the thyroid in mind in treating all cases of nephritis.

Treatment.—While the matter of treatment is familiar to all, there are certain points worthy of mention. The establishment of a proper dose of thyroid extract requires careful clinical observation. Frequently, variations in potency and rate of absorption of the drug cause difficulty and lead to unsatisfactory results. The question is frequently asked, "Which preparation of thyroid is best?" This should make very little difference, as long as it comes from a reputable manufacturer. One will usually be better satisfied if the same product is used all the time. There is no excuse today for a physician to use any brand of thyroid that does not conform to the U.S.P. regulations.

All cases should be given, at the beginning of treatment, small doses from one-tenth to one-half grain of thyroid extract, increasing as deemed necessary, thereby avoiding the danger of converting a long-standing hypothyroid suddenly to a marked hyperthyroid, with embarrassing and, at times, very disastrous results. We believe most hypothyroids have been such since early childhood, and are unprepared for a sudden change in their body metabolism. The time of administration we believe to be of very great importance. We give routinely the amount of thyroid gland required for twenty-four hours at one dose, from one to two hours before breakfast.

Many clinicians claim to get little, if any, results from thyroid taken by mouth by certain patients. We have noted in those same patients seen by us that they had taken their thyroid at various times during the day. These same patients, when put upon the above routine, were able to get a prompt response.

My reason for adopting the above routine, which, so far as we know, is original, was based upon the belief that certain individuals secreted a substance in their gastrointestinal tract during digestion capable of destroying almost any amount of thyroid gland taken. Gastrointestinal x-ray studies made upon these patients have, without exception, shown some degree of gastric retention after six hours. It should, therefore, be obvious that the usual method of giving the dose shortly before each meal had just as well be given during or afterwards. To further substantiate this, we have found, in our patients who had been taking their thyroid in the usual manner before we adopted the above routine, are getting along just as well under this plan on about half the amount they had formerly been taking.

Treatment with thyroxin has many advantages: it may be given satisfactorily by mouth or intravenously. Observation of the patient, and determinations of the basal metabolism rate at intervals, are necessary for the best results. Our experience has been confined almost entirely to thyroid extract. We can find very little mentioned in medical literature regarding the use of iodine in these cases of hypothyroidism. My experience has been that it does not do any good, while some cases are made distinctly worse. I have seen cases that have been converted, by the prolonged use of iodine, from a state of mild myxedema to one of atypical hyperthyroidism, showing marked prostration, nervousness, and distinct mental symptoms and increased metabolic rate. In none of our cases, though, has the metabolic rate been very high; certainly not in comparison with the symptoms. These cases have all improved rapidly upon being put to bed with complete withdrawal of iodine. In each case, the basal metabolic rate has returned to a minus reading, after the withdrawal of the iodine.

Plummer and others of wide experience have found that a great many of the cases with large colloid goiters show a basal metabolism rate below

normal, varying from mild hypothyroidism to various degrees of myxedema. It should, therefore, be evident that these cases of simple, large, colloid goiters should not have iodine, but a partial thyroidectomy to relieve the pressure and enable the remaining gland to function properly. If evidence of hypothyroid function persists, then thyroid extract in small doses should be administered, otherwise the gland may again enlarge to its former size.

I have been very much interested in the relationship that may exist between hypothyroidism and sterility. Litzeznberg has reported the result of a large series of experiments in this line, and I wish to give you his impressions:

1. The relation between the ovary and the thyroid gland is generally known.

2. Myxedema is certainly a cause of sterility.

3. Lesser degrees of hypothyroidism are, by the result of investigation, apparently also a cause (or index of a cause) of sterility.

4. A normal basal metabolism rate is apparently necessary to conception and a normal continuance of pregnancy.

5. Properly supervised thyroid medication will restore the basal metabolism rate to normal, and will, in some cases, result in conception.

6. Women who habitually abort should have their basal metabolism rate taken.

Not until recent years has the technique of making a basal metabolism determination been simple enough to be of clinical value in the average hospital. Formerly, they were so complicated that only a chemist could make them. In recent years, however, many machines have been brought out for making this test that are accurate and simple to operate. The advertisements of some manufacturers would make one believe that the average office attendant could successfully operate them. This, to a degree, has led many physicians to lose respect for the value of a metabolism test in goiter cases. This is most unfortunate, because their cases are diagnosed and treated on clinical signs alone. The teaching, in most all goiter clinics today, is that basal metabolism determinations are of indisputable value—as much so as any other laboratory procedure—as an aid in diagnosis and treatment, when properly interpreted.

Summary.—Hypothyroidism is probably more often encountered than is generally believed. The diagnosis is often possible from clinical signs alone. The early or atypical cases are the ones most often overlooked. In these, basal metabolism determinations are of great value as an aid to diagnosis.

The treatment in most cases is most satisfactory if carried out with caution and continued long enough. There is great tendency to relapse if cases are not followed up.

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A PLEA FOR A REDUCTION IN THE MORTALITY OF ACUTE APPENDICITIS *

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It would seem, at the very outset, that an apology is due for the reopening of a subject that we believe is so perfectly understood; but again, when we consider that the mortality and the morbidity reports substantiated by statistical bulletins show both of these conditions are on the increase, then I shall leave the question of an apology entirely to you.

"The incidence of a disease and its mortality are two criteria by which the capacity of the profession should be judged."

Not only in West Virginia, but in other states as well, the rate of mortality is on the increase—but I am happy to state that the rate in this state is lower than in most. Several years ago I reported, in an editorial in the WEST VIRGINIA MEDICAL JOURNAL, a series of 132 cases of transported rural appendicitis, and began the article by saying that, through the agency of the press and the various methods of health propaganda, the public mind was gradually becoming educated about the dangers of appendicitis. If this be true, then we may review the statistics of this disease with concern, on account of an ever-increasing mortality rate, and believe the fault to be largely ours. But we still have ardent worshipers at the shrines of oleum ricini and magnesium sulphate, and parents and others still try to "scatter" the attack, and often do, "all over the abdomen." It is, in a measure, comforting to know that this state's rate

* Read before the West Virginia State Medical Association at White Sulphur Springs on May 21, 1930.

ranks with the lowest. In the accompanying table will be found the mortalities in West Virginia from 1922 to 1928, inclusive.

MORTALITY IN WEST VIRGINIA

Year	Total Deaths in State	Deaths from Appendicitis	Deaths Per 100,000
1922	15,396	145	
1923	17,081	167	
1924	15,887	190	
1925	17,132	172	10.51
1926	18,144	190	11.43
1927	16,990	198	11.72
1928	17,511	212	12.35

The mortality rates per 100,000 for the years 1922, 1923, and 1924 are not available. Of these deaths, 700 were white males and 451 white females; 65 were colored males and 60 colored females. The white adult male is the chief sufferer. Murat Willis has stated that since 1915 the mortality in acute appendicitis has increased 31% in the United States. English writers place the blame on poor operators and poor post-operative care. Another cause of increase may be due to the fact that deaths due to pneumonia and other unavoidable complications are put down as due to appendicitis. Be the cause whatever it may, the statistics show that the deaths occur in the cases in which the diagnosis has been delayed until the disease is no longer confined to the appendix. It has been stated by Konig that 18% of the cases are admitted with the wrong diagnosis. Generally it is the atypical case, seen either early or late, that worries us all, especially those with normal or subnormal leukocyte counts.

In 1925, in the United States and Canada, there were approximately 500,000 cases of appendicitis and approximately 25,000 deaths. The death rate from appendicitis equals the combined rate of ectopic pregnancy, pyosalpinx, gallstones, pancreas, spleen and thyroid diseases. It is nearly equal to the rate from gastric and duodenal ulcer, intestinal obstruction, and gallstones. There appears to be a general rise of 30% in the mortality rate, and in this state, from statistics available, the increase is plus 20% for the four years ending in 1928. In passing, allow me to call your attention to the close association of tonsillitis and acute appendicitis. I have recently had a case of acute gangrenous appendicitis associated with quinsy, the latter appearing first.

The highest incidence of peritonitis is in the second twenty-four hours of the disease.

There are a great many factors to be considered in the mortality in this condition, and for the purpose of clarity I have taken the liberty of arranging them as follows:

1. Faulty diagnosis.
2. Proper diagnosis and too much dependence placed upon laboratory reports as to when operation should be done.
3. Operative technique. (Please do not consider for a moment that I am going to try to tell men of your ability and experience how the operation should or should not be done, but I do have a few suggestions of my own.)
4. Improper post-operative care, or, if you will, post-operative neglect.

Now, I am not attempting to make light of laboratory men and their work, but I am sure there are a great number of conditions in which the laboratory reports are an adjunct to diagnosis rather than diagnostic in themselves.

It is well and, I believe, proper to consider every patient as having appendicitis, in the presence of any acute abdominal pain, until it can definitely be proved that he does not; for "the appendix is often not content with being mischievous: it is often mysterious as well." I shall not bother you to repeat the classical symptoms and signs of this disease, except to say that delay is dangerous and waiting for fever is hazardous. I recently heard the professor of surgery in Edinburgh say that the only mistake that John B. Murphy ever made was to wait for the appearance of fever before establishing a definite diagnosis of acute appendicitis. I might also state that, while a short period of waiting might be indicated, heat instead of ice is the proper application. This is a personal observation.

Nausea and vomiting occur in only 70% of cases; usually only once or twice in the beginning, except as the aftermath of purgation.

Acute pain in the lower abdomen may be any one of the following: Appendicitis, Meckel's diverticulitis; salpingitis; cecal distention; ureteral stone; ureteral stricture; ovarian cyst; ureteritis; lead colic; pelvic abscess; retained testis; periostitis of the pubes and ilium; osteitis of the great trochanter; hernia (femoral, inguinal, obturator, duodenal, diaphragmatic, lumbar, Petit's triangle); typhoid fever; pneumonia; pleurisy; herpes zoster.

The pain from appendicitis may be seen anywhere. Sixty-nine per cent of the cases are typically appendicitis when seen, and only twenty per cent of cases show rigidity that can be elicited clinically.

Often one is compelled to consider appendicitis even in the presence of previously created lower abdominal scars, for often the appendix has not been removed, even though the patient was told that it

was, and especially is this the case in women who have had some type of gynecological work done. In my short experience I have had four cases of peritonitis with coexisting right rectus and McBurney scars, with one death, and all of these patients had been told that the appendix had been removed. These, at the first operation, had been the so-called "interval" cases, and what had been done except simple laparotomy I could never determine. Now, at this point, let me state that, in discharging a patient after laparotomy for appendicitis with abscess in which the appendix was either not found or the condition at the time too desperate to warrant a search, these people should never be told that the appendix has "sloughed" or "rotted out." It most usually does not, and its previously diseased condition invites other attacks. The patient, lulled by a false sense of security, may, of his own accord, delay matters in a later attack until the onset of peritonitis.

I try to remember that in typhoid fever the fever precedes the pain, while in appendicitis the reverse is most usual; but, in spite of this, I once operated upon a boy for appendiceal abscess, only to find that the "abscess" was a large mesenteric gland. I am happy to say that he recovered. When possible, children should be seen by a pediatrician, and pneumonia suspects should be seen by an internist.

Lord Moynihan says that "the salvation of life is greater than the establishment of a convincing, irrefutable clinical diagnosis." Curtis adds that "it is better to have a less accurate diagnosis and a more favorable prognosis."

Personally, I never operate until:

1. I have taken the history myself from the patient himself, and I keep my hands in my pockets and the abdomen covered until I am through.
2. Physical examination is made by myself. (This may be a little awkward in cases referred with the diagnosis already made, but it is the patient's privilege and the surgeon's duty.)
3. Careful perusal of all laboratory reports.
4. Rectal, pelvic and throat examinations along with the examination of all hernia locations.

Don't guess. Da Costa has said that "an intuitive diagnosis is a rapid method of reaching a wrong diagnosis."

From the standpoint of laboratory reports, complete blood and urine reports will tell you more than any others, as far as this condition is concerned. Urine in men with urethritis and in all women should be a catheterized specimen.

Too much confidence can not be placed in the total white cell count, as it is, as you know, misleading at times. All of us have seen cases of gangrenous appendicitis with early and even advanced peritonitis with normal or nearly normal total white cell counts, and it is, indeed, these most serious cases that are associated with "an apparent depression of the myelocitic response." In the presence of immature forms of polynuclears we have an excellent factor of diagnosis as well as prognosis, even before operation is done. The Schilling index is the one usually observed. Leukocytosis is present in only seventy-six per cent of cases.

For the benefit of those doing large amounts of industrial work, and to satisfy my own mind, let me say that, to make a diagnosis of "traumatic appendicitis," (1) trauma must have been directly over the appendix area; (2) onset of symptoms must have been immediate; (3) no preceding attacks of the following conditions must be present in the history: indigestion, biliousness, colic, ptomaine poison, etc., for any of these might have been appendicitis; (4) this must have been the first attack and the only one; (5) at operation, evidence of appendicitis *de novo* must be verified.

X-ray has been suggested—the flat-plate method of Case—but it is of little value except in ruling out intestinal obstruction, and even in the latter condition it is by no means a positive procedure.

I firmly believe that, in the face of conflicting reports from any and all sources, the original clinical impression and findings of the surgeon personally should decide if operation is to be done or not, remembering that practically all conditions with which appendicitis is most likely to be confused demand operative treatment almost as imperatively as does appendicitis *per se*.

The choice of an anesthetic is by no means to be lightly considered. In my practice I use ethylene for all cases, combined with oxygen and a small amount of ether if necessary to get proper relaxation, but I find that this combination is seldom necessary. I use this anesthetic in all cases, regardless of age, condition or complications. I have had no experience with avertin or sodium amytal in this type of condition. The palpable and well-defined, walled-off abscess may be well drained under local anesthesia. Spinal anesthesia is advocated in cases of peritonitis in which ileus is suspected, serving a double purpose in this type of case. This is not for the occasional operator.

It may be said that all cases may be operated upon as soon as the diagnosis is made, provided (1) rigidity overshadows distention of the abdomen and (2) the vascular system is competent. Low blood-pressure, thready pulse, cold extremities, cyanosis of the fingernails, call for the tentative non-operative treatment of Ochsner, especially so when the condition is associated with a "silent" abdomen and diminished pain. This treatment is not a substitute for operation, but a sensible outline of treatment to prepare the patient for one later.

The question of incision will always start a riot. The right rectus incision is by far the best always, and is advised by those having the greatest experience. I use it, even for interval cases, and have cause to respect this method of approach. The McBurney and the extraperitoneal approach are useful in the drainage and treatment of frank abscesses in desperate cases of this kind where it is known beforehand that no great attempt is going to be made to locate and remove the appendix. The McBurney incision allows for appendectomy only, and at times not even that. The pararectal incisions by reason of nerve injury invite ventral post-operative herniæ. It is said that the lies of doctors are written on the gates of Hades with a piece of ice, but the surgeon's mistakes are indelibly traced on his conscience. The McBurney incision allows many errors.

To "get in quick and get out quicker" is good, but it takes only a moment to look around gently, and you may be rewarded by finding a condition the correction of which may save hours of anxiety and perhaps the patient's life through the avoidance of a second operation. You may be able to remove appendices that, at first glance, seemed hopeless. Be less spectacular and keep your eyes off the clock, considering the patient first as well as last. I do not want to be operated on by a "ten-minute man."

The question of drainage is always one of judgment; but when in doubt, drain. It is easier to take them out than to put them in. I mark my drains so that I know exactly where the ends are in the abdomen, and take more time putting them in than I do removing the appendix. To drain properly is to understand the anatomy of the abdomen, especially the mesenteric roots and folds and the anatomical fossæ. I leave drains in until, as Deaver says, "they fall out, almost."

I have never had a residual abdominal abscess, and I am heartily against the early removal of drains where drainage is originally indicated. Coffey's method of abdominal quarantine is of value. I believe that the most fertile source of post-operative mechanical obstruction is due to poor knowledge in placing drains. The suprapubic stab and the left McBurney may be used in cases of general peritonitis.

Cecostomy and enterostomy at time of operation depend usually on the patient's distention and the condition of the terminal ileum and the cecum. The method of Mayo is conceded to be the best, using the small stab wound in the loin for the exit. Closure in layers is always advised, using interrupted sutures when possible to do so.

Post-Operative Conditions. — In post-operative care, close attention to all details saves many lives, even after a delayed diagnosis and incomplete operation. We always have said that a good interne was one that ran around the hospital with an enema tube in one hand and a stomach tube in the other. This may apply to some of us as surgeons who are not blessed with assistants and internes.

I shall mention some of the common post-operative conditions and offer some suggestions for their relief:

Position depends on the indipidual case and the pathology found at operation, and post-operative complications.

Ice and ice-water induce vomiting and gas distention of the abdomen. Hot drinks are the best.

Vomiting and "spitting up" is best relieved, if persistent, by the ordinary duodenal tube, passed via the nose or mouth, emptying the stomach and washing it out. Leave the tube down and repeat this often, using soda water for lavaye. Without tryinv this, one can hardly appreciate the gratefulness of the patient. This well replaces the old fractional calomel treatment and soda mixtures and others that are legion.

Hiccough is usually relieved by gastric lavage and ether, 15 minims, hypodermatically, and change in position, and perhaps with small doses of morphia. When persistent, the treatment should be repeated. If the condition does not disappear under the above treatment, the following post-operative conditions should be borne in mind: Early intestinal obstruction, early uremia, pulmonary embolus (small), and spreading peritonitis.

Morphine is given in doses to suit the patient. The quantity should be reduced when vomiting occurs, for morphine excites pylorospasm.

Stimulants are given as indicated, and hypodermatically when at all possible. Murphy drip of salt solution should be used routinely, and especially

where much vomiting, either before or after operation, has been present. Glucose solution may be administered intravenously, 1,000 c.c. of 10% solution in salt solution. Normal salt solution, 15 units of U-10 insulin to precede and follow this, if thought necessary.

Abdominal pain, fever, sweats, emaciation, all suggest residual abscess, and these people should be reoperated upon as soon as possible.

All post-operative pneumonia cases should be x-rayed to rule out the possibility of post-operative massive atalectasis, which requires special postural and bronchoscopic treatment for relief.

Self-formed fecal fistulæ are often life-saving in their formation, but in certain locations, if allowed to go on, may cost the patient his life. Fistulæ are less persistent and less resistant to treatment the greater the distance from the duodenum. Boiled milk is the best diet in these cases, not only for its constipating effect but also because it furnishes a medium for the digestive juices to work upon, reducing the amount of tissue destruction. The tenth normal hydrochloric acid, beef-juice treatment, is ideal and is becoming widely used. In short, this treatment is as follows: The skin around, the opening, and the tract of the fistula are wiped out with alcohol, followed by drenching the same area with tenth normal hydrochloric acid. Gauze soaked in the same solution is laid over the skin about the opening and the tract is packed lightly, also leaving a small tract in the center. Through the opening left in the center is packed gauze soaked in equal parts of olive oil and beef juice that is known to be sterile. The acid neutralizes the alkaline medium of the fistula and the beef juice and olive oil furnish a food for the digestive juices to take advantage of. This treatment has been lately modified, but I am giving the original method.

Post-operative wound rupture and secondary hemorrhage will be but mentioned, as the treatment is self-evident.

Diabetics require special management.

In looking over the serious post-operative complications, I believe that the one troubling us the most is post-operative ileus and intestinal mechanical obstruction. I will include in this an added condition, "spastic ileus." There is one thing certain about these cases: they all die if not treated properly, and even then if operation is done late. All cases exhibiting, post-operatively, intermittent, colicky pains in the abdomen, vomiting or "spitting up," peristalsis (visible or audible), intestinal tinkling, constipation or distention unrelieved by enemas, gastric lavage, change in position, eserin, pituitrin and heat, should be suspected of ileus and obstruction and operated upon in the first twenty-four hours after the onset of symptoms. Of course, one never gives castor oil any more in this type of case. The spinal anesthesia treatment will avail little in this type of case if much morphine has been given. Pituitrin, eserin and choline are useful to a degree, but too much can be used. A treatment by no means new to some has many adherents; that is, the giving intravenbusly of 75 c.c. of a fifteen to twenty per cent solution of sodium chloride. Its action at times is prompt and it is always safe. Sennatin, peristaltin, and isacen are widely used in Germany, but their effects are uncertain and varying. The Welch bacillus serum, 10 c.c. intramuscularly, has not given the results expected. Morphine should be withheld as much as possible. Rectal examination may tell much, and it is more important here to place a finger in the lower end of the alimentary canal than a thermometer in the upper. Should treatment along these lines avail nothing, then operative management should be sought, for further treatment by drugs simply "compounds the felony of delay."

The best approach is by the midline incision, and the operation is best done under general anesthesia, remembering that every unnecessary manipulation is but a shove nearer the grave. Operation must be done early.

At operation, very often the bowels will be found to be uniformly distended, bluish purple, and no obstruction can be found. Examine the terminal ileum for spastic areas. Very often the wound is closed and the patient is markedly relieved for twenty-four hours or more, only to have the same symptoms return. If the case is one of spastic ileus, a short interval of anesthesia, preferably gas or spinal anesthesia, will help. I had a case of this kind recently, and the appearance of a spastic bowel one never forgets.

Rapid enterostomy probably drains only one loop of bowel, and multiple enterostomies have been advised with immediate closure; but, to my mind, the method given below is the best of all. How often it is the case to operate upon a patient, find the point of obstruction at once, free it, and hear the fecal and gas current go by the point, close the abdome nand feel that wonders had been accomplished and another life saved, and then be called back in a few hours, to find your patient on the threshold of death and past all aid of any kind!

Is this not due to the release of products of a poisonous nature, suddenly poured out upon the thirsty bowel below and rapidly absorbed?

W. B. Holden's treatment takes but fifteen or twenty minutes, is easy to do, and the results obtained by it suggest its adoption. The point of obstruction being noted, a clamp is placed on the bowel just proximal to this point and a purse-string is placed in the amesenteric border. The bowel is opened and a flanged glass tube about three-fourths of an inch in diameter, to which a tube of rubber at least two feet long is attached, is inserted and the purse-string held tightly by a clamp. The bowel clamp is then removed and placed at right angles to the bowel axis, just below the insertion of the tube. Beginning at or near the duodenum, the bowel is gently drawn through the well-vaselined fingers of the surgeon by the assistant, and the contents are rapidly evacuated, the tube withdrawn, and the enterostomy wound closed in the usual manner. In this man's hands, the mortality has been reduced twenty per cent.

Sodium chloride in all methods is urged. Some advise sodium bicarbonate on the theory that it prevents acidosis. These people already have an alkalosis; why add to it?

The theory of spinal anesthesia in paralytic ileus is that the splanchnic inhibitory reflexes are abolished or blocked and leave the vagus motor reflexes have full play.

It will seem that I have wandered a great deal, but I feel that all I have mentioned has a direct bearing on the mortality reduction in this common surgical malady. In some of my ideas I am like Kipling's cat, in that "I walk alone."

The statement of Ruskin, that the work of science is to substitute facts for appearances and demonstrations for impressions, can never have a better application than in the study of this ever-present surgical disease.

Conclusions.—1. The entire study of appendicitis must be gone over again, and every phase in its entirety carefully considered.

2. Proper diagnosis, made early, or the diagnosis of the "immediate surgical abdomen," is imperative.

3. Gentle, precise, deliberate operative management, with anatomically placed drainage, is essential.

4. Close attention to the point of minutest detail in the post-operative care is necessary.

5. The menace of purgatives has been found to be the greatest factor in the childhood mortality.

6. Proper selection of cases for immediate or deferred operations.

7. Exploration is warranted on the barest possibility that obstruction exists, knowing that the mortality increases one per cent with each hour of procrastination.

8. When a patient dies from appendicitis, some one is to blame.

9. In 1928, 9,000 people were murdered. In the same year, 12,000 died because they took a laxative in the presence of abdominal pain.

10. Before the age of fifty, four times as many people die from appendicitis as die from cancer in all forms.

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THE RELATION OF THE PARANASAL SINUSES TO EYE CONDITIONS*

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In 1908, Onodi published his works on the anatomical relationship between the paranasal sinuses and the optic nerve. Since that time many valuable contributions have been made to this subject by Hajek, Skillern, Van de Hoeve, de Schwienitz, and others.

The works of Onodi are very extensive. His complete studies resulted in the establishment of thirty-eight different morphologic relations, bearing on the relation of the optic nerve to the sphenoid sinus and the last ethmoid cell. These thirty-eight different morphologic relations are then divided into twelve groups. "Our observations," says Onodi, "have shown that the wall between the last ethmoid cell and the canals opticus is nearly always as thin as tissue paper; dehiscence in the walls of the accessory sinuses have been found where the diseased mucosa may come into direct contact either with the dura mater or the optic nerve sheath."

The relationship between the paranasal sinuses and the optic commissure and nerve is therefore very intimate and should be understood from an anatomical standpoint by both the ophthalmologist and the rhinologist. The sphenoid and posterior ethmoid sinuses are of the utmost importance, although one must not lose sight of the other sinuses.

The course of the optic nerve to the commissure is a more or less direct one backward, inward and upward. In its course through the orbit it is surrounded with fat, while at the apex it passes through the origin of the recti muscles. The nerve then passes through the optic foramen in the sphenoid bone. The ophthalmic artery also passes through the same foramen. The nerves converge intracranially and form the optic commissure.

The length of the optic nerve varies from 30 to 55 mm. Of this, 25 to 40 mm. is intraorbital in position, while the remaining part is located in the optic foramen and the anterior cerebral fossa.

In the orbit the optic nerves are rather far removed from the sinuses, but as they pass backward they come into more intimate relationship with the sphenoid and posterior ethmoid sinuses.

The optic commissure is often placed immediately above the sphenoid sinus. In a large proportion of cases the optic commissure lies posterior to the sinus. It is not infrequently found that the posterior ethmoids grow into the body of the sphenoid.

The thickness of bone between the optic foramen and the sphenoid sinus varies from 0.2 to 2 mm., with an average thickness of 0.5 mm.

The frontal sinus, unless developed well dorsomesially, does not bear any important anatomical relationship with the optic nerve. The same is true of the maxillary sinus, which is separated by a large amount of fat and the intervening osseous wall.

Many eye lesions are attributed to sinus infection, namely: orbital periostitis, edema of the lids, conjunctivitis, iritis, keratitis, scleritis, choroiditis, uveitis, and retrobulbar neuritis. Principal among these is retrobulbar neuritis. It often is diagnosed only after a very careful examination. It is not infrequent that a fundal examination will reveal nothing, the nerve head, vessels and retina being visibly normal.

Fuchs says: "Inflammation of the optic nerve may develop at any spot whatever of the nerve. Of course, it is directly visible in the living eye only when the optic papilla, which is accessible to ophthalmoscopic examination, is involved. Such cases we call neuritis intraocularis. From them are to be distinguished those cases in which the inflammation is located in a portion of the optic nerve situated further back (neuritis retrobulbaris). Since in this

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case the focus of inflammation can not be seen, its existence must be inferred from other symptoms."

One of the ordinary symptoms complained of in retrobulbar neuritis is a loss of vision. This varies considerably, depending upon the duration of the disease. It is not uncommon to observe a dilatation of the pupils. This is explained in the loss of vision. Should there be an inflammatory condition of the orbit, an exophthalmos might be present. Nyctalopia, contraction of the visual fields, and enlargement of the blind spot are also present. The fundal findings are of great importance. These vary from normal finding to a beginning pallor of the nerve, and in other cases a marked redness and swelling about the nerve with tortuosity of the retinal veins. It is very important that these inflammatory swellings be differentiated from edema due to intracranial pressure.

For this differentiation we must depend upon our ophthalmoscopic and perimetric findings. The x-ray is also important in determining and locating infected sinuses, should any be present. A careful history, physical and neurological examination should be made. From the history, much valuable information can be obtained, particularly in regard to recent cold in the head and the mode of onset of the decrease of vision.

A very careful examination of the region of the middle turbinate is also most important. By means of the various drugs used for shrinking the tissues and by suction, much valuable information can be obtained.

For our information on visual fields we are indebted to Van de Hoeve and Peters. Again it is due to the anatomical relations of the sinuses to the optic nerve that many of the symptoms can be explained. One of the earliest symptoms the patient complains of is a diminution in vision. In perimetric examination one may find a normal field or some contraction. There is also some enlargement of the blind spot of Mariotte. This enlargement is present in most all sinus infections involving the optic nerve, and is an early symptom. In sphenoid and posterior ethmoid infections, an enlargement of the blind spot is almost a constant finding. When there is an unusual extension of the frontal sinus along the roof of the orbit, it may also be a sign of positive value. With an infection of the maxillary sinus, an enlargement of the blind spot may not be present, or, if so, may be a late finding.

A retrobulbar neuritis of sinus infection is usually unilateral in character rather than bilateral, as seen in neuritis of central origin.

The peripheral fields may be contracted or undisturbed, depending upon the severity of the infection. The early loss of appreciable vision depends upon the virulence of the disease. As has been mentioned before, central vision is often undisturbed. Then, again, there may be a marked loss of vision. One of the early signs of a retrobulbar neuritis is an enlargement of the blind spot. There is also an enlargement of the blind spot for colors of such a character that red and green show the largest scotoma, blue smaller, and white the smallest.

Retrobulbar neuritis must be distinguished from a descending neuritis which likewise affects the retrobulbar portion of the nerve. A descending neuritis is transmitted along the nerve sheaths and the exterior portion of the nerve, while a retrobulbar neuritis used here is confined to the axial portion of the nerve trunk and is hence called axial neuritis. Since, in axial neuritis, the inflammation is not transmitted to the disc, the ophthalmoscope shows in the papilla no changes, or later, after the disease has subsided, the signs of atrophy might be present. Owing to the absence of ophthalmic changes, the diagnosis of retrobulbar neuritis must be made from the symptoms, namely: vision. Again the scotoma is of utmost importance. This scotoma must be differentiated from that due to central choroiditis and retinitis. The optic nerve scotoma is distinguished by the absence of retinal metamorphopsia and that the first colors to disappear are red and green. In macular disease the retinal metamorphopsia is present and a scotoma for blue developed before that for red or green. These scotoma must not be confused with those found in glaucoma.

In conclusion, there is a close anatomical relation between the paranasal sinuses and the optic nerve.

The most common affection of the optic nerve attributed to sinus infections is retrobulbar neuritis.

Enlargement of the blind spot of Mariotte is an early and almost constant finding.

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SOME CLINICAL OBSERVATIONS ON PNEUMONIA*

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To a great extent, the ideas that one has of pneumonia are developed from experience with this disease, and, therefore, the type of pneumonia that is more or less characteristic for the community in which one lives is the most important factor in molding our thoughts on this problem, especially in reference to the clinical course and the treatment. Pneumonia is by no means the same problem in all communities, if one merely takes the mortality figures as the point of differentiation. It is obvious that a death rate around twenty per cent would indicate a milder form of the disease than when a percentage of forty to forty-five is regularly encountered. My experience has been with a pneumonia which these latter high figures represent. Without any attempt at apology for so high a death rate, it would be reasonable to infer that the cause is not one of inadequate treatment, but rather that there are certain environmental factors present in some communities which may have an untoward influence on recovery. It is hardly reasonable to believe that the pneumococcus can vary so greatly in its virulence in different places. One must, therefore, look to the host as the possible guilty party. It is our impression that, in an industrial community like Pittsburgh, which is composed topographically of rather high hills and river valleys, a combination of smoke and fog which lingers on account of the valleys, associated with a rapidly changeable climate and the presence of irritating gases in the air which are at times easily recognizable, particularly when foggy, tend to render our respiratory tract more vulnerable to pneumococcic infection. We do not refer to automobile gas, but to sulphur dioxid and hydrogen sulphid. Chronic upper respiratory tract infection is very common in all large cities, but the incidence of pneumonia does not follow in the same degree in all places. Nor should we forget fatigue as a cause of lowered resistance; but have we any reason to feel that this factor is more prominent in one city than in another? We by no means wish to give the impression that the above statement with reference to the cause of our high mortality is established. It is really merely surmise, and undoubtedly would be very difficult to prove; but, at the same time, we can not see how a factor other than one of environment can be held responsible for the high mortality. Prophylaxis obviously is difficult, but it would be a great boon if smoke and irritating gases were completely eliminated. The Mellon Institute has done a great deal to help in the solution of this problem.

During the last two or three years, chiefly through the physiological studies of Henderson and Haggard, much interest has developed in reference to the relation of atelectasis or collapse of lung to the subsequent development of pneumonia. This applies especially to the pneumonia following operations. Every one is familiar with the so-called post-operative pneumonia. At one time this condition was considered as always being secondary to the inhalation of ether, but it may develop following local anesthesia. Embolism of lung may produce a picture quite similar to post-operative pneumonia, and for that reason many considered this to be the likely explanation. That collapse or atelectasis of a local area in lung follows the plugging of a bronchiole is well established by bronchoscopic studies. Recently, Henderson has called attention to a form of atelectasis which occurs apparently without primary bronchiolar blockage, but is due to such shallow inspiration that there is no air exchange in the alveoli and the lung becomes deflated by absorption of the air into the blood capillaries. He terms the condition "acapnia." We believe this relationship of atelectasis to the so-called post-operative pneumonia is an important contribution. Henderson further showed that, following anesthetics in which some degree of atelectasis is apparently very common, if the patient breathed a five per cent carbon dioxide with oxygen, the former gas, acting as the normal physiologic stimulus to the respiratory center, would inflate the collapsed portions of the lung and likely render the later development of pneumonia in these areas very much less likely. Hence the procedure, which is now generally used, of hyperventilation after an anesthesia by CO_2O mixture as a measure of prevention of post-operative pneumonia. Henderson also recommends this form of treatment for surgical shock, and we have, during the past week, seen an example of this condition where the CO_2O inhalations, five minutes each hour, appeared to have been of great benefit. At the onset of a post-operative pneumonia we would advise this form of treatment, to be continued for one or two days if necessary. The gas mixture is given for five minutes in the hour while the patient is awake. One readily sees the effects of respiratory stimulation by the

* Presented before the Marion County Medical Society, Fairmont, West Virginia, September, 24, 1930.

carbon dioxid in the breathing of the patient, and for this reason care should be taken that overstimulation does not occur. We have known of occasions where the gas tank was mistaken for one of oxygen, and respiratory center fatigue almost to failure followed a too long administration of the gas. This, however, was a matter of almost continuous inhalation for some hours.

There are one or two points in reference to the clinical picture of post-operative pneumonia which we would like to emphasize. In spite of the fact that we are accustomed to see a very high mortality in ordinary pneumonia (if we may use that term), it is rare for us to meet a fatal case of post-operative pneumonia unless the patient has been greatly debilitated by disease prior to the operation. In other words, post-operative pneumonia is not toxic and, therefore, all methods of therapy become more difficult to evaluate. In our experience, the Henderson method of CO_2O inhalation is the best form of treatment, along with general symptomatic measures as the needs may indicate. As a rule, good nursing, a minimum amount of disturbance to the patient, and very few drugs will be found the best treatment.

We would call your attention to one physical sign in post-operative pneumonia, namely: the sudden onset of a rapid pulse, which often is counted from 120 to 140 or even at a higher rate. The patient appears perfectly comfortable, may have little or no increase in respiration; but the temperature may be suddenly elevated to 102°–104°. The pulse rate and something in the general appearance suggests shock, and it is interesting, therefore, to note this in view of Henderson's recent paper. We believe that the pulse rate in ordinary pneumonia is the most sensitive clinical guide as to the toxicity of the patient. This point will be discussed later. The rapid pulse of post-operative pneumonia, however, does not indicate toxicity, because they are not toxic and these cases have a very low death rate. The explanation of the rapid pulse must be different in the two forms of pneumonia, and Henderson's idea of shock or a nervous origin appears to us at present to be the correct explanation. It is an interesting fact that the same rapid pulse rate is also noted in infarct of lung secondary to an embolus, and in this process atelectasis is certainly not a primary factor if it occurs at all.

Let us consider some problems of pneumonia as we see it as a primary infection. It is this form of pneumonia that carries a mortality between forty and forty-five per cent in Pittsburgh. To us, the most important thing to be decided in a case of pneumonia is the degree of the toxicity. This is of so much more vital interest than the location of the lesion and slight varitaion in the physical signs. It is a very simple matter to treat a mild pneumonia, but the severe infection is quite different. If we compare a mild case of pneumonia with an interval or chronic appendicitis, and the toxic pneumonia with an acute gangrenous appendicitis with peritonitis, we have an analogy perchance, not so overdrawn. In other words, we must keep the mild and the severe infections separated, at least in our minds, so that we shall be able to estimate more accurately just what has been accomplished in treatment; because, if only the mild cases recover, then it becomes obvious that our therapy in the serious infection, where the high mortality lies, is not of much value, and the sooner we realize this the sooner we put ourselves at least in a receptive mood to improve it if possible.

There are some clinical signs which, in our experience, are nearly always associated with severe infections. First in importance is a rapid pulse. A pulse rate of 120 or over that is not of a temporary kind, as due to excitement from examination or moving, at any stage of the disease means a toxic case. A gradually rising rate to 120 or over toward the latter days of the disease carries a very serious prognosis. We can not recall a case of pneumonia in which the patient died with a pulse rate much under 120. A rising respiratory rate is also of importance. Fast respirations at the onset may be due to pleural pain with shallow breathing and are to be expected, and are not necessarily of prognostic significance. Temperature is not much of a guide. A falling blood-pressure is not good, but a low pressure, even under 100, if this is the patient's normal, is of no prognostic value. There is a good deal of nonsense about hypotension. Certainly we see so-called hypotensive cases, under 100, go through pneumonia very easily. In fact, the weak and asthenic types apparently take the disease rather mildly, while the toxic cases are nearly always in the very strong, young adult. The leukocyte count is better when high, and the opposite is true when a leukopenia is present.

The presence of pneumococci in the blood, as shown by blood culture, is the only other sign which is as valuable as the pulse rate as a guide to prognosis. Last year we had about forty per cent of our cases showing positive cultures at some stage of the infection. It is very important to repeat the blood cultures

in toxic cases that may show a negative culture at first because a positive one may appear later on in the illness. A positive blood culture, developing later in the disease, is almost a certain sign of a fatal result. The mortality in the cases with positive cultures is between seventy and eighty per cent. Hence, its presence, which is but an indication of the severity of the disease, is of great value in estimating the outcome. It is also of value to estimate the number of colonies of pneumococci that are grown, because there is a quantitative factor present which accounts for recovery in some of the positive blood culture cases. We have never seen a case with more than five colonies per cubic centimeter recover. Cases which had negative blood cultures in our last year's series had only sixteen per cent mortality. The tremendous difference, therefore, between the positive and negative blood culture group is noteworthy. This, of course, is well known, as many observers (Cecil, Cole, Park) have referred to this fact in their reports. We have never seen a streptococcus in a blood culture from a case of pneumonia.

With reference to the treatment of this disease we must keep in mind the mild case and the toxic case. In testing out any therapeutic measure, it is very obvious that the latter group is the one in which to test your procedure. If any method of treatment reduces the mortality in the positive blood culture group, in a large enough series of cases it is of definite value. To me this is really the absolute test in the treatment of pneumonia, and at least one hundred positive blood culture cases must be included, as the mortality in this group is universally found to be between seventy and eighty per cent. These figures act as a control.

The general symptomatic treatment for pneumonia is probably the same in its main features as it has always been in every community, and there is little need to go into any detail. Plenty of rest and quietness, a cool, well-aired room, good nursing day and night, a large intake of fluide—we prefer lemonade, from two to three quarts daily, having 150 grams of dextrose with two lemons to the quart, thus giving 600 calories of easily utilized food per quart. To drink large quantities of fluids, do not use glass tubing in drinking because it is very tiresome for a sick individual, but use the old-fashioned drinking cup with a spout. You might try this yourselves, and then you will realize how hard it is to take fluid in any quantity through a straw or glass tube. An enema of salt water is given when the abdomen is distended. It is not necessarily a daily event. At the beginning of the illness the bowel should be cleared by castor oil if possible. Local application for pleural pain, atropine at times for moisture, codeine for cough, morphine for lack of sleep, and pituitrin for abdominal distention and to keep up peripheral vascular tone, are the chief drugs. We see little value in the alkalies. A mild case does not need digitalis or oxygen.

In severe infection, or in the cases which we have referred to as toxic ones, we have had plenty of opportunity to test almost all methods of treatment. This is the group that swells our mortality figure, and, therefore, this is the form of pneumonia that must be influenced if we wish to make a better showing in our therapy. Let us take for granted that all symptomatic measures have been used, and let us discuss some of the other features of therapy briefly. What about digitalis? Is it of value in this disease? We have never seen any evidence that digitalis is of the slightest value in toxic pneumonia, but are of the impression that, in adequate doses, it may be actually harmful. For this reason we have not used it for the last five years. A most interesting and valuable contribution on this subject has recently been presented by Niles, who, in a large, well-controlled series of pneumonia cases in New York, has actually shown statistically that the mortality in those cases receiving digitalis is between seven and fourteen per cent greater than in those cases not getting this drug. Even in a case with a fibrillating heart was this also true, but the difference was not so great. Our experience with this drug in pneumonia is the same, although we have never made a controlled study as was so carefully done by Niles.

May not one ask what is the actual cause of death in pneumonia? Are we certain that they die from heart-muscle failure? Is it not possible that failure of the vital centers in the superior dorsal nucleus in the medulla (respiratory, vagus, and vasomotor) may be the more important factor, perchance the most common cause of death? Theodore Janeway, in a very interesting article as far back as 1907, stated that, in his opinion, vasomotor center involvement with subsequent vasomotor peripheral paralysis was the usual cause of death in pneumonia. Atchley has recently referred to the same idea. We have long been impressed with the possibility, from clinical grounds and from negative heart-muscle findings at autopsy, that circulatory failure in pneumonia does not arise in the heart muscle. Congestive heart failure is a very difficult condition to recognize in a toxic case of pneumonia, because the usual signs

as basic râles in lungs and cyanosis, may be simply a part of the infectious picture. The enlarged liver may be impossible to feel on account of the abdominal distention. Edema is rarely present, while shortness of breath is a symptom of the lung lesion. The rapid heart rate surely can not be said to be a sign of failure. We have, during the last three years, been very interested in recording venous pressure observations, and it is our impression that elevation of venous pressure above the upper limit of normal figures (11 cm. of water) to a critical level (18 cm. of water) is a most valuable guide as to the state at that time of the right heart. Respiratory failure as the end result of pneumonia is also not easy to definitely recognize. The death in pneumonia is a toxic death, using the word *toxic* in a very broad way, as no definite toxin (in the sense of the diphtheria toxin) has been associated with the pneumococcus. It may be that the force of this toxemia is felt more by the vital centers which control the circulation than by the myocardium itself. Possibly this is why digitalis does not seem to help those very sick patients with pneumonia.

Henderson's CO_2O mixture, in our hands, has been of no value in the toxic case, and when a patient is hyperventilating it appears to us to be dangerous to use. We have previously mentioned that it was of great value in the post-operative cases and as a preventive measure after operation, and that its usefulness in these instances was due to inflating a deflated or atelectatic lung. You will recall that we mentioned that a sudden onset of a rapid pulse was the outstanding feature of this form of pneumonia, and that it was not a sign of toxicity. By inference, therefore, it is our impression that atelectasis plays no part in the development of ordinary pneumonia, as the rapid pulse in this instance is a sign of toxicity, usually appearing late in the disease. Oxygen, in our hands, has been a disappointment in the toxic cases.

In severe infections which are so often associated with a positive blood culture, one can not help but feel that organisms must be attacked directly. Hence, all serum work is important and, perchance, if we have not arrived at the successful solution of this problem, and there is little doubt that we have not, still this is a most essential line of research. We have usually a large number of type four cases, which in some years represent more than half of our pneumonias, and frequently they are very virulent infections. Add to this the type three cases (for which there is also no serum), and one can see that serum plays but a minor rôle in our problem. Further investigation of this problem may bring forth new ideas which may entirely change the status of serum therapy.

We have been interested in the use of dextrose as a physiological method of combating the infection by keeping up the body's carbohydrate reserves. We give by mouth, in the form of lemonade, two or three quarts daily, thus adding plenty of fluid with from 1,200 to 1,800 calories of food in addition. In the toxic cases, furthermore, we have given the dextrose intravenously from three to six times a day in a twenty-five per cent solution in quantities not more than 200 c.c. The physiologic action of dextrose in hypertonic solution is likely more than the mere addition of a certain number of calories. One of my associates, Heintzelman, has shown that it acts, as would be expected of a hypertonic solution, in drawing fluid to the blood stream and thus increasing blood volume. Heintzelman found the blood volume was increased nineteen per cent after the dextrose injection. This may be one of the physiological reasons why a failing pulse may become much stronger. Cushing has shown that, following an intravenous injection of hypertonic dextrose, the brain is contracted, having given up some of its fluid to the blood stream. This procedure is used prior to operations on the brain. It may be that, in toxic pneumonia, in certain cases a dryer brain means a better functioning medulla. We have seen one instance of what appeared to be a respiratory failure in pneumonia, following prolonged CO_2O inhalation, dramatically relieved by lumbar puncture. The fluid was under increased tension. Experimentally, it has been show that the heart muscle can be directly stimulated following the perfusion of dextrose solutions. A possible action on the glycogen supply of the liver is also to be kept in mind, as this organ may have much to do with the problem of immunity. In any case, we are of the impression that over a five-year period we have seen many cases which, ordinarily, one would feel that there was little in the appearance for a hopeful prognosis, make a good recovery. Our positive blood culture cases have shown a better mortality percentage, but there is still much to be desired in these very virulent infections. We are well aware of the limitation of the dextrose treatment, but at the present time we feel that, in certain types, it would appear to offer our best method of assisting the body in keeping up the fight against the infection. It must be given carefully. We have never given it to children, and often

hesitate to use this method in the aged, as they are prone to develop a reaction which is not well borne by elderly people.

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SOME ASPECTS OF THYROID DYSFUNCTION *

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The clinical manifestations of thyroid dysfunction are so numerous and varied that it is rather difficult, in a brief paper such as this, to correlate all of the symptoms and signs; but a brief study of a few of the more common types of dysfunction will be well worth our consideration.

It has been well said that the thyroid gland is the pacemaker of the body, controlling the functioning of the various cells and organs. Any malfunctioning of this gland, therefore, affects the various organs over which it has such intimate control. For the purpose of discussion we shall divide these various dysfunctions of the thyroid into two groups, namely: the hyperthyroid group and the hypothyroid group. Plummer has given us what is probably the most workable classification of the diseases of the thyroid gland. He classifies them into: (1) diffuse colloid goiter; (2) adenomatous goiter with or without hyperthyroidism; (3) exophthalmic goiter; (4) myxedema; (5) malignancies.

Diffuse Colloid Goiter occurs most frequently in those regions, chiefly mountainous, in which the iodine content of the water is low. It is characterized by enlargement of the gland, usually symmetrical, in persons between the ages of twelve and twenty, being more common in the female, the ratio being about four to one. It is usually symptomless except from pressure, and disappears spontaneously between the ages of twenty and twenty-five with or without the use of iodine. This condition can usually be prevented by the judicious use of small doses of iodine given to children of the school age. The enlargement is explained by the fact that there is, first, an increased colloid deposit, and, secondly, an increased blood supply—both of which are efforts on the part of the gland to furnish sufficient thyroxin to the tissues—a vital necessity at this time of life. The basal metabolism in these cases is usually either normal or, in most cases, slightly abnormal.

Adenomatous Goiter With or Without Hyperthyroidism.—According to Plummer, the mechanism of the formation of an adenomatous goiter is as follows: "Due to a relative iodine insufficiency, there is an increased deposition of colloid; later, if the insufficiency persists, there is the formation of new acini which develop into adenomatous masses, with or without a capsule, being for the purpose of supplying the tissues with the proper amount of thyroxin, the active principle of the thyroid." It seems to be a rather conclusive fact that these adenomatous masses can produce normal thyroxin, irrespective of the remaining thyroid tissue. Plummer attempts to explain the production of adenomatous goiter with hyperthyroidism in the following manner:

"Assuming that there is a small adenomatous mass in the thyroid gland which is producing, say, 0.1 mgm. of thyroxin daily, then, by the regulatory mechanism of the thyroid, the remaining part of the gland produces only 0.2 mgm. of thyroxin, as the body needs only a daily output of 0.3 mgm. of thyroxin; theoretically, the remainder of the gland produces no thyroxin. Then, as the adenomatous masses increase in size and production, symptoms of hyperthyroidism develop."

This is rather plausible in the true adenomata with hyperthyroidism (which are rare), but it does not exactly explain those cases in which there is a mixture of exophthalmic and adenomatous goiter, which is very frequently the case in the so-called goiter belts.

As a rule, our advice to patients with adenomatous goiter with hyperthyroidism is usually wise, namely: surgical intervention. But I fear that we still have a tendency to cling to the old adage, "Don't bother the goiter until it bothers you," which, of course, is very bad advice, because it has been shown that these types of goiter do have a deleterious effect on the heart, even though the basal metabolism is normal. The average duration of non-toxic adenoma is about seventeen years, and very frequently these patients come to us with symptoms of hyperthyroidism, but the marked damage to the heart, kidney and liver is far greater than would be expected from the short duration of the hyperthyroid symptoms. It would seem, then, that our advice to all patients with adenomatous goiter should be surgical removal, for the mortality in this class of patients is practically *nil*, barring accidents, and the results are gratifying if we are careful to remove all adenomatous masses.

* Read before the Cabell County Medical Society, Huntington, West Virginia, March 27, 1930.

In most of the larger goiter clinics, Lugol's solution is given routinely in adenomatous goiter with hyperthyroidism; but, if there seems to be a harmful effect, the iodine is withdrawn. The results following surgery in this class of patients are very gratifying. The percentage of recurrence is very small and the rehabilitation of the patient is rather rapid, unless irreparable damage has been done before surgery is resorted to.

Exophthalmic Goiter.—Given a frank case of exophthalmic goiter, with the classical symptoms of exophthalmos, tremors, tachycardia, nervousness, restlessness, loss of weight, and a symmetrically enlarged gland with thrills and bruits, one has little difficulty in making a correct diagnosis. But statistics from the varoius goiter clinics are to the effect that these classical symptoms occur in only about sixty per cent of the cases. The remaining forty per cent of the cases test our diagnostic acumen to the utmost. Not infrequently patients come to us complaining of "heart trouble," general weakness, nervousness, and loss of weight. If we are not careful with these patients, we are apt to class them as "cardiacs" and relegate them to a life of semi-invalidism; whereas, a more careful study, with basal metabolic readings, will reveal the real cause for the cardiac ailment. These cases respond almost spectacularly to surgery, provided, of course, that they are seen fairly early or before irreparable damage has been done. Even with marked cardiac damage, these cases improve (or, rather, do not decline) after subtotal thyroidectomy; whereas, without surgery, the cardiac condition progresses to a fatal termination. It is remarkable to see a fibrillating heart cease fibrillation in a few weeks after subtotal thyroidectomy. This fact was very forcibly impressed upon me recently, while making rounds on the goiter service of one of the large goiter clinics. I saw not one, but a large number of these cases, and the remarkable fact was that no digitalis or quinidine was given—only Lugol's solution. I think it is a rather general rule in the majority of the goiter clinics not to give digitalis to the goiterous heart except in those cases of decompensation with edema and ascites, and even then the dosage is carefully regulated.

Since the routine use of Lugol's solution in the pre-operative treatment of exophthalmic goiter, as advocated by Plummer in 1922, the operative mortality in exophthalmic goiter has been reduced to one per cent or less. In fact, Pemberton's mortality rate for 1928 was 0.72, which, of course, is no more than that incurred in any type of major surgery of equal severity. The post-operative hyperthyroid storms are exceedingly rare; the stage operations, such as superior pole ligation, lobectomy, hot-water injections, and röntgen-ray therapy are being used less and less. Such complications as recurrent laryngeal nerve paralysis, tracheal collapse, post-operative hemorrhage, pneumonia and embolism may occur, but, with refinement in technique, are becoming less frequent.

Hypothyroidism.—We shall not attempt, in this paper, to discuss the true myxedema, but will confine our discussion to those cases with slight hypothyroidism without the true symptoms of myxedema.

Recently we noted that a number of our pelvic cases, which at operation had been found with very little ovarian tissue, returned to us complaining of nervousness, fatigue, dyspnea, and gain in weight. These symptoms were not relieved by frequent injections of corpus luteum and ovarian substance. Basal metabolic readings revealed a hypothyroidism in the majority of cases, and the symptoms were relieved by fairly large doses of thyroid extract.

It has been rather definitely proven that hypothyroid characteristics can be transmitted to the child through a definitely known hypothyroid mother who has gone untreated throughout her gestation. It has also been shown that, frequently, these hypothyroid women, if untreated, abort at about the third or fourth month. A basal metabolic rate should therefore be a part of the prenatal care of a large number of pregnant women.

Recently an interesting case of hypothyroidism was outlined to us by one of our colleagues. The patient, a woman, presented herself with the chief complaint of dyspepsia, which had been present over a period of two years. In the past six months she had gained about twenty pounds in weight, was easily fatigued, and was nervous. A gastric analysis revealed an absolute achylia. The urine was negative; the blood examination showed 80% hemoglobin with 4,000,000 red cells and no abnormal cells. The basal metabolic rate was minus-34. Thyroid extract, one-half grain, was given four times a day for a month; also dilute hydrochloric acid, one drachm, after meals, with the result that the patient lost ten pounds in weight, the dyspepsia disappeared as did the fatigability. Another gastric analysis was not made, but it would have been interesting to learn whether or not the thyroid medication had any effect on the achylia. It is well to bear in mind that most cases of hypothyroidism require thyroid medication over a long period, as

there is a tendency for a return of symptoms when medication is stopped. These patients should be watched carefully for untoward effects from too much thyroid extract, such as fast pulse, loss of weight, and increasing nervousness. Basal metabolic readings, made at intervals, give us a very good index as to the efficacy of our treatment.

Malignancies.—A malignancy engrafted on an exophthalmic goiter is very rare, but it occurs in a little over two per cent of the cases of adenomatous goiter. Some of these malgnancies are very rapidly growing and cause a fatal termination early. The papillary adeno-carcinomata of the thyroid are only mildly malignant. I recently saw a case of this kind operated upon. There was a tumor the size of large walnut to the right of the larynx in a man twenty-four years old, which, he said, had been growing for ten years. A microscopic section of this tumor, and also of a similar growth removed from the right lobe of the thyroid, revealed a papillary adenocarcinoma. Radium emanation into the substance of the gland, followed by deep x-ray irradiation, offer the best results in these cases of malignancy.

In conclusion, I shall emphasize these points:

1. Adenomatous goiters without hyperthyroidism are not to be dealt with lightly, because they usually become toxic, on an average, seventeen years from the onset; they cause marked cardiac, renal and hepatic damage before the symptoms of hyperthyroidism develop, and they become malignant in about three per cent of the cases.

2. The exophthalmic goiters should be operated upon early. The statistics of The Mayo Clinic show that, for 1929, not a single fatality resulted in those cases of exophthalmic goiter who had shown symptoms for twelve months or less.

3. A more general use of the basal metabolic rate in routine diagnosis will elevate a lot of the so-called "cardiacs," "neurasthenics," and "dyspeptics" into a class where proper treatment will afford marked relief.

Dress Children by Temperature

A child must be dressed according to the temperature of his home and his school, and not according to the outside temperature, Dr. Jesse R. Gerstley tells mothers in the magazine, *Hygeia.*

A healthy, active child should wear, in winter, cotton underwear, shoes, long stockings, and a lightweight suit. Then, when he goes out into the cold, wraps can be piled on to meet the temperature.

SOME FACTS ABOUT FADS *

By WILLIAM GERRY MORGAN, M.D.
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"Fussiness about health increases fear, the great enemy of mankind, and impairs the serenity which is the basis both of health and happiness." Such was the opening sentence of an address which Dr. Robert Hutchison, of London, delivered before the ninety-eighth annual session of the British Medical Association at Winnipeg this last month, at which I had the privilege of being present.

This appears to me to be a timely and not inappropriate note of warning. Dissipation in any direction in the long run is always destructive, not alone in pursuit of enjoyment of the moment but quite as much as if it be in the attempt to cure unemployment of body ills.

When one studies the vast health activities of our generation and realizes the immense amount of time, money and energy expended by the enormous numbers of individuals engaged in these activities, we sometimes wonder what is to be the sum total of the result therefrom. Certain it is that the first and immediate result is, as Dr. Hutchison has said, to arouse in the minds of the public fear of impending chimerical disaster. This leads many unthinking people into all sorts of unwholesome fads and practices which more or less seriously undermine their physical health and render unstable their mental and moral balance.

It was said two thousand years ago that "He that striveth for the mastery is temperate in all things," which is as basic a rule of conduct today as it was then. How sadly we of today have fallen away from this precept of right living!

Perhaps nowhere in all the world do people tend to swing to extremes of conduct so much as right here in our own land. This tendency to plunge into extravagances in all directions is born of an environment in which opportunity and material means and the abundance of human energy are unlimited, incident to the development of a new and vastly rich country.

A successful reign through fear alone is never long enduring, and usually is productive of evil practices which bring distress and suffering in their wake.

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* Delivered at the opening session of the International Conference and Exposition of the American Bakers Association, Atlantic City, New Jersey, September 22, 1930.

A child is unfortunate, indeed, who is brought up in a household where fear and anxiety rules. Even though the anxiety is directed toward his protection, he rarely enjoys the robust health of the playmate for whom little thought is expended in health matters. I may go a step further and express the thought that our duty toward the child does not end in shielding him from the development of the fear complex. We should attempt to develop in him a robust courage of thought and speech as well as physical fearlessness. It is gratifying to know that a step in this direction is being taken in some of our schools, even in the primary grades. This is being done by requiring, at frequent intervals, the children to describe, in their own words, before the school, their impression of some outside occurrence. In this way, in the years to come, we shall develop a large number of men and women who will have the gift of expression and the courage of their convictions. This also teaches the habit of observation and clear thinking in early years, which should, to a degree, protect them later on from being too readily led away by unsound fads and fancies.

Faddists of every type are the curse of modern civilization, and though each in turn is but short-lived, yet there is always another to take his place. It is a curious psychological fact that the failure of one fad after another to satisfy the needs of the gullible public does not even sufficiently assault their intelligence to cure them of the fad habit; the age-old belief in the pot of gold at the rainbow's end; the eternal longing for the short cut to sound health, happiness, and riches.

There can be little doubt that the number of individuals who believe that this or that particular type of food or diet is necessary to good health overshadows all other types of faddists put together. The food faddist who believes that constipation is the source of all mental, nervous and bodily ills, and that the cure of this super-devil is the eating of "roughage," is perhaps one who is guilty of the greatest sin, and leaves behind a trail of suffering which does not end when, his fancy being caught by some other fad, he turns away from over-engorgement of indigestible and highly injurious foodstuffs.

Constipation of itself, in an otherwise healthy individual, rarely if ever produces disease, and thus is more or less inconsequential. In such individuals, if ignored, the bowel habit will be spontaneously restored when the accumulation in the bowel reaches a point to stimulate the act of defecation. The harm begins with the misdirected effort to force bowel evacuation by unsuitable means, such as eating over-stimulating and highly irritating, indigestible foods, which, as I have said, are classed under the obnoxious term of "roughage." These types of foods, if eaten in excessive amounts or constantly, ultimately set up areas of local irritation which sooner or later develop into low-grade, actual inflammation. Such areas of inflammation can, and very frequently do, lead to the development of more serious disease entities, such as ulcer, and may even so disturb the individual body cells in that location as to stimulate riotous growths, developing into cancer.

I have mentioned briefly this chain of pathological events in order to emphasize the inadvisability of the widespread use of many inappropriate types of foods, among which I believe bran to be.

This brings me to the specific consideration of the use of bread, "our daily bread," which is, in truth, the staff of life of all civilized peoples, a very small percentage of whom habitually turn aside from this important foodstuff, for one reason or another, probably the chief of which is to induce changes in body weight. The nutritive quality of much of the white bread produced at the present time has undergone improvement through the incorporation of larger quantities of milk, thus making it a much more valuable foodstuff, largely obviating the criticism of white-flour bread which the advocates of whole wheat broadcast with ever-increasing vehemence.

These faddists specifically point out that vitamines B and C, being inherent in the bran content of the wheat, are lost in the milling processes during the production of refined flours, which is undoubtedly true. Nevertheless, this deficiency, although slight, is somewhat compensated by the addition of the milk in the processes of breadmaking. And, further, because bread is usually eaten with butter and other foodstuffs which supply vitamines more abundantly. The vitamine content of bran is of little real value to the human economy, because bran itself is not only not digested and does not readily give up these necessary elements, but is in itself an irritant to the alimentary mucous membrane and interferes with the digestion and assimilation of other foods. Further, as has been pointed out by Dr. Fishbein and others, "Cereals are not to be looked upon as the dominant source of vitamines in any event, so that the comparison of wheat in different degrees of milling extraction seems somewhat gratuitous." If whole-wheat bread had been proven to be as wholesome as white-flour bread, the war-time U. S. Food

Administration would have insisted on the use by the nation of whole-wheat flour exclusively. This it refused to be coerced into doing, even as a patriotic measure.

Investigations carried on by McCance and Lawrence in England in 1929, as pointed out by Dr. Fishbein, showed that "in advocating whole-meal bread for general use, whether in time of need or in times of plenty, it should be remembered that not only men but also women and children are concerned, and that all the experiments on which the arguments are based have been carried out on animals or adult males. Children are very intolerant of high-cellulose diets, and, for some, brown bread is far too irritating, even if given with the idea of relieving constipation. In time of peace, of course, the grown-up population, if they have choice, will never eat whole-meal bread unless they like it, no matter how specious the advertisement; but they may force their children to eat it in the belief that they are doing them good. One should therefore be cautious in advising whole-meal bread generally."

No single food contains all of the necessary qualities, one food supplying what another lacks, and all necessary ingredients being present in sufficient quantities in the ordinary well-balanced meal.

Frequently of late there have appeared articles, not only by faddists but by physicians as well, in which we are advised to give no thought to what we eat or the manner of its preparation, being guided entirely by the cravings of the appetite. This appears to me an unsound doctrine—one which, if followed literally, may lead us into all manner of digestive troubles.

As an illustration of the truth of this, one needs but to mention the decay of teeth of children who are permitted to eat candies and other sweets to excess. However, it is claimed in some quarters that it is not the consumption of excessive quantities of sugar which causes the caries of the teeth, but rather the lack of proper mouth hygiene. With this view I can not agree. Rather it appears to me that the fault in these individuals lies in two directions: First, the excessive indulgence in sweets causes an engorgement of the portal circulation, which, through interference of the general circulation, prevents proper nutrition of the teeth; and, second, those who overindulge in sweets habitually eat an insufficient amount of other foods supplying the necessary constituents for the growth and repair of the teeth.

I will refer to but one other faddist, from among the many that are rampant in the land, namely: the exercise faddist. The man who makes a god of keeping "utterly fit" through exercise. Exercise of mind as well as body is wholesome and necessary for preserving normal function, but in none of the activities of life is it so essential to adapt the method to the individual needs and capabilities as in this. Intemperance in bodily exertion, by going beyond the elastic limit, is productive of great harm. The effects of this sort of intemperance often are not apparent at the moment, but develop weaknesses which seriously handicap the individual in later life. This effect is particularly noticed in causing weakness of the heart muscle. It is generally recognized that athletes are not long-lived, and frequently die suddenly. I have a feeling that a large proportion of those who are reported in the daily papers as having died from acute indigestion fall into this class; hence the same or greater care should be given to the type and degree of bodily exercise as to other activities, particularly when the individual has reached the middle decade of life. It is unwise for one who has, for fifty years, been of sedentary habits suddenly to plunge into strenuous and active physical exercise.

It may be that we doctors, in our earnest desire to find truth through scientific research, are often too precipitate in feeding the results of our studies to the public before we ourselves fully understand and evaluate them.

The laity, ever eager to be cured of some distressing disorder, such, for instance, as cancer, are quick to seize upon each new method which offers the relief which they seek, rarely pausing to learn whether such remedies have been proven of sound and practical value. Thus, widespread disappointment and actual suffering is experienced, and often great financial loss is entailed. The medical profession keenly regrets and attempts to prevent premature publicity of unproven results of scientific research. It is unnecessary to mention specific instances of such regrettable occurrences, but they are constantly being exploited and the public should be on guard against being led along unsound paths, which end only in disappointment, sorrow, and distress. It is only fair to the medical profession to say that these premature disclosures often come about without the intent or desire of the physician carrying on that particular piece of research.

As a guide to conduct, a half truth, or a rule not understood, is liable to lead the unwary far afield.

I regret to have to say that, too often, business men seize upon some new and untried discovery to

exploit and make financial gain therefrom, to the undoing of the multitude. A cause for more profound regret is that, in some instances at least, when further scientific investigations have shown that the modicum of good which accrues from this or that new discovery is far outweighed by harm to the user, and this fact brought with indisputable proof to the manufacturers thereof, they not only do not cease to manufacture but attempt to discredit the scientist, thus violating the golden rule. I dare make this assertion, since I feel sure that each one of you here present can call to mind practical illustrations of the truth of this statement.

In listening to Dr. Hutchison's interesting address I caught another phrase which stuck in my memory: "Health, like happiness, is to be found, if at all, by the wayside; and the more you pursue it, the more it flees from you." This leads to the thought that, whereas we should guard our health as a priceless possession, we should not be constantly anxious about it. Much publicity is being given to the universal adoption of periodic health examinations, especially in this country, and, whereas this practice has much to commend it, nevertheless I feel that it must be safeguarded from being made a fetish. Health consciousness is the slogan of the advocates of periodic health examinations. The danger in this practice becoming universal lies in developing the ill-health fear complex. Already this regrettable extreme is beginning to be seen in those of hypochondriacal tendencies. I wish to make my attitude toward periodic physical examinations quite clear. That this new departure in preserving the health of the nation has the very greatest possibilities for good I firmly believe. It is an established fact that any practice which is productive of good has equal potentialities for harm if improperly or intemperately employed; therefore it is necessary that the universal application of periodic health examinations should be safeguarded from the outset so as not to arouse the fear complex in the public mind. If we do this, there is everything in the practice to commend it for widespread adoption. I have seen little good, and much harm, come from inculcating in the minds of the young and the immature, thoughts of eugenics. It appears to me that, to attempt dissemination of broader subjects of health to those who are not old enough rigidly to evaluate them, might result in the development of large numbers of healthy-hipped young people.

Most physicians, after a long life of experience in the practice of medicine, feel that they could develop and lay down such basic rules of health for the guidance of people at large as would, in a couple of generations or so, abolish from the world a large percentage of the bodily ills to which human flesh is heir. Even if we could evolve such basic rules of right living and broadcast them daily to the public for a generation, we should find in the end that we had accomplished little good, for the simple reason that most of the people all the time would not be willing to follow them with any degree of faithfulness and completeness. This is so because of the complicated nature of modern social life. Let me quote another sentence or two which I recall from Dr. Hutchison's address: "What we need for the attainment as individuals is not more knowledge, but a change of heart. We hear such catch-phrases as 'A nation's health is the nation's wealth,' and 'Health is the country's asset.' Believe me, a country's greatest asset is character."

It seems to me that Hutchison has stated, for all time, a great truth. A great nation is truly built upon sterling character.

This leads me to repeat what I have said in other speeches often during the past two years in my journeyings hither and yon about the country: that by the ever-increasing tendency towards paternalism we are not only not teaching self-dependence but are steadily weakening character in the individual. We are robbing him of the habit of the necessity for the thought of tomorrow, permitting him to slumber on thoughtlessly through today. In the last analysis we shall find that this has not been a salutary practice. He that would enjoy a safe and comfortable old age must lay for himself the foundation in early life.

It is our sacred duty to think long and scrutinize carefully, before we lend our moral and material support to the thousand and one agencies for physical and moral uplift.

CASE REPORTS

ARSPHENAMINE ENCEPHALITIS *

By WILLIAM M. SHEPPE, M.D.
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Reactions from arsphenamine are certainly frequent enough to obviate any necessity for special discussion. Fortunately, however, reactions which apparently involve the nervous system alone are seldom seen, nor is the treatment of such conditions

* From the Medical Division of the Wheeling Clinic.

well established. The following report illustrates the most terrifying example of all types of arsphenamine reaction and attempts to outline a systematic plan of treatment.

The patient, J. D., was an extremely robust and well-developed man, 21 years of age. Several weeks before the onset of his seizure he developed a penile lesion which was diagnosed by dark-field examination as a chancre. Treatment was instituted at once and three injections of neoarsphenamine were given in approximately two weeks' time. The third injection was given at three o'clock on the afternoon of the thirteenth day of treatment. At six o'clock in the evening the patient was sitting, chatting with a group of friends, when he complained of feeling badly. Within a few minutes convulsive movements of the arms and legs began and total unconsciousness rapidly supervened.

When I examined him two hours later he was entirely comatose and could not be aroused. If disturbed, he immediately became noisy and generalized convulsions would ensue. The breathing was stertorous. A complete physical examination, including examination of the eyegrounds, was entirely negative. The pupillary and tendon reflexes were normal except for hyperexcitability. No laboratory examinations could be made at the time except an urinalysis, which was negative. Blood was taken for a Wassermann test, which was later reported as negative. The question of differential diagnosis was of extreme importance in this patient. Diabetic coma and uremic coma might, within reason, be eliminated by the negative urinalysis. A cerebral vascular accident was very unlikely in a young patient, and, furthermore, there was no neurological evidence of such an occurrence. Cerebral hemorrhage or thrombosis in a very young individual is nearly always due to vascular syphilis, and one would not expect a primary lesion to appear in the presence of a preëxisting vascular syphilis. Therefore, in the absence of any history of brain injury, and with the knowledge that the patient had had salvarsan, there remained only to differentiate the condition of arsphenamine encephalitis from an acute epidemic encephalitis. The lack of prodromata, the fulminating nature of the onset, the negative eyegrounds, all helped, at least, to eliminate the latter syndrome.

A diagnosis of arsphenamine encephalitis was made and the patient was admitted to the hospital for further treatment. Chloral hydrate, krains thirty, per rectum, was the drug of choice for control of the convulsions. No doubt, at the present time we would be more inclined to employ three or four grains of sodium amytal by vein. Sodium thiosulphate was given intravenously in 0.5 of a gram dosage every six hours. Adrenalin chloride, 1/1,000, was administered in eight-minim dosage every two hours. This was subsequently increased to fifteen minims every two hours. Hypertonic glucose was given by vein twice a day.

We were somewhat surprised to note that, after about six hours, the convulsions became milder and finally ceased; respiration became quieter and the patient was able to take liquid nourishment. He remained apathetic and stuporous for the succeeding eight hours, but after this time rapidly became orientated and asserted that he felt well and would like to get up. He was discharged from the hospital on the fifth day, without physical or neurological evidence of the severe experience through which he had just passed.

Discussion.—We are all aware that arsphenamine is capable of producing severe reactions in almost any organ or system of the body. The skin and the renal epithelium are the points most often affected. The case just described is characteristic of the unfavorable effect of arsphenamine on the nervous system. The frequency of this occurrence is probably quite out of proportion to its appearance in the literature. Reports of this type of involvement are particularly rare in American literature as compared with the European reports, due, no doubt, to the higher percentage of autopsies obtained on the continent.

The post-mortem findings are characteristically those of a very marked edema of the brain and cord. In addition, there is extensive capillary engorgement and, no doubt, greatly increased capillary permeability as attested by the presence of innumerable petechial hemorrhages.

Success in the treatment depends entirely upon an extremely early recognition of the situation, and, therefore, it is imperative to quickly eliminate all other causes of coma and convulsions. The onset is not always nearly so acute as in the case I have just described, and may be quite insidious. The situation is greatly complicated if the patient under treatment does not have primary syphilis, as in this case, but is known to have extensive nervous tissue involvement. The Herxheimer reaction in such patients, who are begun on intensive therapy without sufficient bismuth or mercury preparation, may exhibit an encephalitic syndrome closely simulating an arsphenamine encephalitis. It is obvious that the

difficulty of diagnosis is greatly increased in such individuals.

Sodium thiosulphate, adrenalin, and hypertonic glucose are the drugs par excellence. The action of adrenalin is, no doubt, that of a vasoconstrictor, and conservatism in its use is quite out of the question. If necessity demands, the dose may be as much as one cubic centimeter of a 1/1,000 solution intravenously every two to three hours. If improvement occurs, this may then be reduced and the interval lengthened. Stokes reports the use of five cubic centimeters of the drug, given subcutaneously. It is certainly inadvisable to lose time in attempting to make a differential diagnosis between a Herxheimer reaction in a neurosyphilitic and the onset of an arsphenamine encephalitis. In the presence of apathy, coma or delirium, it would be much better to institute the treatment outlined above. In either event no harm would be done, and valuable time may be saved.

Summary.—I have described a type of reaction to arsphenamine which is probably more frequent than the literature would indicate. The great majority of the published reports emanate from post-mortem studies, so that we are particularly pleased to be able to describe a case which responded well and promptly to treatment.

ACUTE OBSTRUCTION IN INFANTS DUE TO INTUSSUSCEPTION

By ALBERT G. RUTHERFORD, M.D., F.A.C.S.
Chief Surgeon, Welch Hospital No. 1
Welch, W. Va.

The following is a report of two cases of intussusception, ileo-cecal in type.

CASE I.—R. R., male, age 18 months, admitted to hospital August 21, 1924, with a diagnosis of intussusception, made by the family physician.

On admission, patient's temperature by rectum was 99°, pulse 110, respiration 22.

Child was crying with pain every few minutes. History obtained from mother showed that the child's bowels had not moved for fourteen hours, except for mucus and small quantity of blood.

On physical examination, abdomen was found to be relaxed. A definite palpable mass was found in the epigastrium. Considerable tympanites. Napkin stained with mucus and blood. A small enema was given to the child, which returned clear except for considerable mucus and small amount of blood. The child was not prostrated, and showed no signs of collapse. The pulse was of good volume and not rapid. The only findings that would lead one to make the diagnosis was the palpable tumor and the blood and mucus in the stool.

Operation: Right rectus incision; light ether. A right rectus incision was made, extending down below the appendix region. On opening the peritoneal cavity a considerable amount of inflammatory fluid was found. Exploration revealed a sausage-shaped mass in the region of the ileocecal valve. This mass was formed by a few inches of the ileum passing through the ileocecal valve, together with invatination of the colon. The obstruction was easily released and abdomen was closed without drainage.

One-half hour after operation a small enema was given, with effectual results. The child was immediately given half an ounce of oil and put on the regular feeding.

The patient made an uneventful recovery, and was discharged from the hospital in nine days.

CASE II.—J. R., male, age 7 months, referred to this hospital by family physician with a diagnosis of intussusception. Entered hospital at 8 P.M., August 14, 1924. The following history was obtained: At 11 A.M., patient was siezed by very severe abdominal pain; commenced vomiting almost at once, and has continued up until admission at 8 P.M. Last bowel movement occurred at 10 A.M. Since then, patient was given enemas and only blood and mucus was expelled.

Physical examination revealed the following positive findings: Prostrate individual, suffering collapse; no marked pain; respiration 40. Examination of the abdomen revealed marked pain in right upper quadrant, with rigidity of the right rectus muscle. A distinct sausage-shaped tumor was made out, running transversely in upper right quadrant.

Operation: Right rectus incision; chloroform. Exploration revealed the following: The cecum was found invaginated into the colon, the invagination having proceeded as far as the transverse colon. The gut was injected, but not black. Tumor mass was reduced by milking out the intussusception, and the abdomen was closed without drainage.

One-half hour after operation the patient was given half an ounce of oil, which was followed by an enema, with effectual results. The child was immediately put to the breast, every three hours.

The child made an uneventful recovery, and was discharged from the hospital ten days after admission.

In the past four months we have admitted and operated on, at Welch Hospital No. 1, three cases of intussusception, with no mortality. This appears to be good proof that, once a diagnosis of acute intussusception is made, the case should be treated as a surgical case and not as a medical case. In both of these cases the diagnostic findings were sausage-shaped tumor in the abdomen together with blood and mucus in the stools.

TUBERCULOSIS ABSTRACTS

Tuberculosis Among Negroes

In slavery days, tuberculosis is said to have been uncommon in the negro. When he was suddenly freed and thrown on his own resources, deaths from that cause rose steadily. The disease is now about three times as prevalent among negroes of the United States as among whites. Moreover, the pathology and the course of the disease in the two races are strikingly different. Does the negro suffer an inherited susceptibility? Has his contact with civilization been too brief to develop the immunity which seems to protect the white race more adequately? Will the handicaps of environment imposed upon the negro account for the increased prevalence and severity of the disease? Serious searches for satisfying answers are just beginning to be made.

Knowledge of the peculiar character of tuberculosis in the negro that explains the appalling mortality is defective. Statements concerning the clinical course of tuberculosis in colored people are vague. The suggestion is repeatedly made that there are conspicuous differences between the pathological changes produced by tuberculosis in the American negro and white people. This conclusion is not warranted by the meager facts at hand. Almost nothing is known about the morbidity of the disease among the colored population or concerning the prevalence of minor but not infrequently grave infections which are the precursors of fatal disease.

Statistical Data in the United States.—Among whites, the death rate for all ages is greater for men than for women, while among negroes the rate is somewhat higher for women. The disease attacks negro children with far greater severity than white, the ratio of deaths for the two races between birth and fifteen years of age being 1:9.2; but from fifteen up to twenty-five, 1:3.9. The death rate has fallen rapidly in both races since 1911, but somewhat less for colored than for white. The mortality graph for negroes is that of a disease that begins in adolescence or early adult life and pursues a rapidly fatal course.

Tuberculosis in Africa.—The interior of Africa was free from tuberculosis before the advent of the white explorer. Sorel, among others, gives us a glimpse of how the disease was spread. At Bassam, on the Ivory Coast, 22.9 per cent of the inhabitants reacted to tuberculin; whereas at Bornake, 212 miles inland, only two per cent reacted. Ziemann found that, among the 80 natives of the highlands adjacent to Bantu, only one reacted to tuberculin, and this man had served as a soldier on the coast. Borrel studied French African troops during the World War. Of recently recruited men brought directly from Senegal to the Frejus Camp, only four or five per cent reacted to tuberculin. The incidence of tuberculosis increased steadily, although earnest effort was made to combat the disease, and the deaths increased from 48 in 1916 to 557 in 1918. The death rate estimated per 100,000 was 624 in 1917 and 1,114 in 1918.

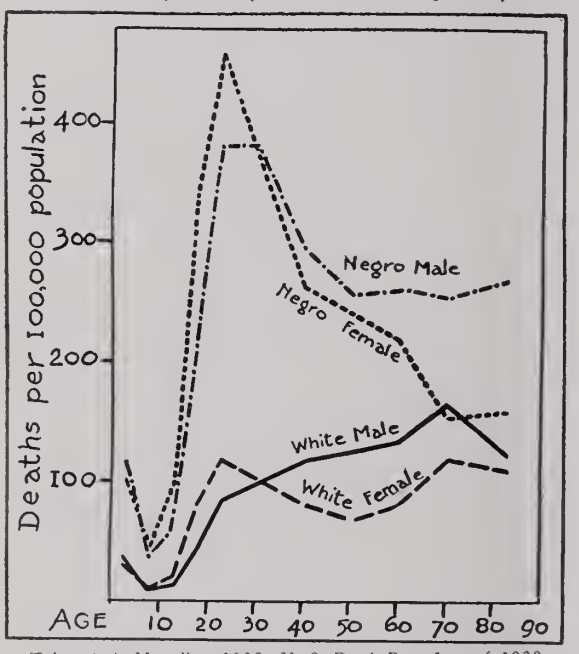
Tuberculosis in Jamaica.—Jamaica has a population of about 800,000 negroes and 15,000 whites. Both races have been in contact for three centuries. The disease is primarily one of cities and spreads to country districts. Dwellings are crowded, and the poorer people are careless in their habits. In the native Jamaican, tuberculosis usually pursues a rapidly fatal course. While the disease in Jamaica spreads rapidly, its short course doubtless retards its spread.

A relatively small number of autopsies performed on those who have died from tuberculosis in Jamaica show that, whereas the chronic type of pulmonary tuberculosis familiar in white people does occur in the native Jamaican, the disease much more frequently resembles that of children in this country. It has the familiar characteristics of a first infection, arising in some part of the lung other than the apex and producing massive enlargement and caseation of the adjacent tracheobronchial lymph nodes. The lungs and lymph nodes contain no healing or healed (calcified) scars of a preceding infection. Death may follow general dissemination throughout the body. Instances of chronic pulmonary tuberculosis identical with that of white adults in this country occur in Jamaica, but even when the disease is most advanced in the apex it often has characters intermediate between those of the childhood and adult types of this country, for massive caseous pneumonia is a conspicuous feature of the lesion and there is

some caseation of the lymph nodes about the bronchi.

It appears, therefore, that tuberculosis in the American negro, in certain respects, is intermediate between that of the native Jamaican and that of white people in the United States.

Heredity and Environment.—Discussions concerning the relative importance of heredity and environment as factors of tuberculosis are unprofitable. Environment determines the conditions under which the invading microörganism enters the body, and inherited susceptibility will determine the varying course of the disease under various conditions of infection. Specific immunity acquired as the result of infection may modify inherited susceptibility. The



Tuberculosis Mortality, 1925; U. S. Death Reg. Area of 1920. —*Proceedings N. T. A.*, 1930, p. 264, *Edgar Sydenstricker.*

circumstances under which human infection with tuberculosis occurs are so complex and imperfectly understood that it is doubtful if we have any information that can be used to determine in what degree heredity influences the susceptibility of the negro race to the disease.

The present information does not show that the negro race has any hereditary susceptibility to the disease, but this possibility can not be excluded. Poverty and unfavorable environment certainly favor the spread of the disease. The pathological anatomy of tuberculosis in colored people of the United States indicates that they escape infection during childhood more frequently than the whites, and then die from a form of tuberculosis that has all the severity of a first infection. Contagion is a problem of preventing massive infection.—"The Epidemiology of Tuberculosis of Negroes," by Eugene L. Opie, *Journal of the Outdoor Life*, September, 1930.

Studies in Tennessee.—In 1927, the death rate from tuberculosis in Tennessee was 96 per 100,000 population for whites and 252 for negroes. The Tennessee Department of Health is engaged in a special study involving the racial dstribution of tuberculosis. Dr. Eugene L. Bishop, commissioner, who is assisted by specialists versed in epidemiology, pathology, and sociology, summarizes some of the impressions derived from the study thus far:

1. There are definite differences in Tennessee between the white and colored races with regard to the total tuberculosis mortality rate, and in the rate by age groups. The difference in mortality rates is most marked in the years of infancy, childhood, and adolescence.

2. Evidence is accumulating that similar differences exist in the racial distribution of tuberculosis infection. Results from an admittedly small group of tuberculin-tested children suggests the possibility of a higher contact rate among contacts in the colored than in the white race.

3. The clinical type of the disease observed is dicerent in the two races. The chronic fibroid type of tuberculosis is rare, but not unknown in the colored race.

4. Generally speaking, negroes present themselves for examination, and begin treatment, in a more advanced stage of the disease.

5. Negroes are less able and less apt to adopt measures calculated to prevent the spread of the disease to other persons.

6. Negroes with tuberculosis are a source of infection not only to members of their own families and associates, but also, under certain conditions, to members of the white race.—"Dangers of the Tubercle Bacilli Carrier," by Eugene L. Bishop, *Journal of the Outdoor Life*, September, 1930.

The Sense of Smell

The sense of smell in man is represented by about one square inch of pigmented olfactory nerve cells. Pure albinos have no sense of smell, says Dr. W. J. Mayo, in *Hygeia*. Lower animals have a much larger amount of pigmentation than man, and, therefore, have a much more accurate sense of smell. A hound, for example, locates his quarry by its odor. The exact location, however, is with the eyes, because the sense of smell does not recognize time, space or motion.

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C. G. Morgan, Moundsville, chairman; H. A. Walkup, Mt. Hope; H. G. Steele, Bluefield.

Committee on Scientific Work

Howard T. Phillips, Wheeling, chairman; R. C. Hood, Clarksburg; Robert King Buford, Charleston.

Public Policy and Legislative Committee

R. A. Ireland, Charleston, chairman; R. H. Walker, Charleston; James McClung, Richwood; C. R. Ogden, Clarksburg; D. A. MacGregor, Wheeling.

Committee on Medical Education

John N. Simpson, Morgantown, chairman; W. T. Henshaw, Charleston; W. S. Fulton, Wheeling.

Committee on Professional Relations

John R. Shultz, Charleston, chairman (4-year term); A .G. Rutherford, Welch (5-year term); W. R. Goff, Parkersburg (1-year term); Hugh G. Nicholson, Charleston (2-year term); E. P. Smith, Fairmont (3-year term).

Workmen's Compensation Committee

W. A. MacMillan, Charleston, chairman; C. A. Ray, Charleston; John E. Cannaday, Charleston.

Committee on Public Health

David Littlejohn, Charleston, chairman; John Thames, Charleston; Will McLain, Wheeling.

Surgical Section

A. G. Rutherford, Welch, chairman; G. G. Irwin, Charleston, secretary.

Eye, Ear, Nose and Throat Section

F. T. Scanlon, Morgantown, chairman; S. S. Hall, Buckhannon, secretary.

Hospital Association Officers

J. S. Turk, Wheeling, president; B. I. Golden, Elkins, president-elect; W. E. Vest, Huntington, first vice-president; A. G. Rutherford, Welch, second vice-president; Mr. Joe W. Savage, Charleston, secretary-treasurer.

PRESIDENT'S PAGE

NOW that the election is over and the personnel of the next legislature is known, the doctors throughout the state should interview their representatives and acquaint them with the aims and objects of the medical profession. Special emphasis should be laid on the fact that these objectives are not selfish, but coincide with the best interests of the populace generally. Regardless of how well our Legislative Committee functions, the aid of every individual doctor is needed. See your representatives!

In closing the year and relinquishing the presidency, I would bespeak for my successor, Dr. Maxwell, the same loyal support tendered me, because the officers of any organization are well nigh helpless without the active aid of the rank and file. I wish also to thank the membership of the West Virginia State Medical Association for the honor conferred upon me and for the aid and support extended during my incumbency. It has been a pleasure, indeed, to work with you and for you, and my sole regret is that I have been unable to achieve more for the profession.

Walter E. West

President.

EDITORIAL

County Society Finance

Below will be found an outline of a plan recently placed into execution in the state of Iowa that solves, once and for all, the problem of financing both the large and the small county society. Many societies throughout the state are faced with the problem of raising sufficient funds to bring in outside speakers and to take care of the general expense of running the society. If the Iowa plan can be worked out in this state, it will provide adequate funds for all societies adopting the plan to take care of the dues of all members, to pay all expenses of outside speakers, to provide commercial malpractice insurance for all members free of charge, and will in all probability leave a comfortable surplus at the end of the year after all of the above items are taken care of. In addition, the plan will take care of the problem of caring for the indigent poor in the county adopting the plan.

Briefly, the Iowa plan involves the care of the indigent poor, under contract with the county court, by the county society. The society must first incorporate. It then secures the contract at a given sum from the county court to care for the indigent poor in its particular county. All funds paid the county society for this medical service is then placed in the society treasury to take care of the above-mentioned items. The plan, as outlined by Dr. R. L. Parker of Des Moines at the recent A. M. A. conference of secretaries, is given as follows in a special bulletin passed out at the conference:

Growing interest in the blanket contract between county medical societies and county supervisors for care of the indigent sick, and an increasing number of inquiries regarding the plan, have prompted the printing of a brief statement of the plan and an analysis of the types of contract employed by various Iowa counties.

As a means of furthering the movement toward blanket contracts, the State Society Committee on Medical Economics proposed the following resolution, which was adopted by the House of Delegates May 13, 1930:

"No contract for the care of the county poor shall be entered into by individual members until they have the approval of the County Society."

The purpose of this action is to prevent local members from bidding against the society, and should always result in the immediate withdrawal of any private bids wherever the county society votes in favor of a contract.

Furnishing medical service for the county poor presents a serious problem to the members of most county societies in Iowa. The Haskell-Klaus law provides for those needing hospital care, and the situation here referred to does not in any way affect that law; but the ambulatory and home bedside cases and all inmates of county jails, poor farms, etc., present a grave problem. How is the county to pay for medical services for those cases that must be cared for locally? Supervisors, social workers, volunteer agencies, medical societies and individual physicians have tried various solutions; but, with one single exception, every method has various drawbacks, most of which end by working numerous hardships upon the medical profession.

This successful method has for some time past been in satisfactory use in eleven societies in Iowa. Many others are now contemplating adoption of the same system. The plan is that of a blanket contract between the medical society and the county supervisors, by which the county pays a fixed annual sum in return for which the society furnishes for the county poor all medical care not provided at the University Hospital under the Haskell-Klaus law (including chronic or incurable cases discharged to make room for those who can be benefited by hospitalization at Iowa City).

The annual payment varies from $1,600 to $12,600 and goes into the society treasury. Service to the indigent sick is rendered upon the order of the supervisors, township trustees, or other authorized persons; and such service is distributed among the members of the society as evenly as possible.

The societies having such contracts are Hardin County, Marion County, Marshall County, Scott County, Washington County, Webster County, Mahaska County, Jefferson County, Fort Madison, Waterloo, and Council Bluffs (the last three being limited to the cities). Many other counties have similar proposals under consideration. The advantage of this plan, according to its advocates, are:

1. Unjust inequalities in payment to physicians for indigent sick services eliminated.

2. Removal of friction between the county medical society or its members and the board of supervisors or social workers.

3. General satisfaction of the community with its physicians because of effective medical service given to the indigent sick.

4. A full treasury which solves the financial problems of the county society.

The latter point is an important one in many ways. The secretary-treasurer never needs to worry about collecting dues, nor members about paying; for county, state, and A. M. A. dues can be paid out of the general funds of the component society. Expense money is always available to bring the best of speakers from even distant points, so that the problems of the program committee are solved. Medical protective insurance, on a group basis, can also be provided for every member out of the general funds.

As an illustration of the success of this plan, it is interesting to note that the society which receives the smallest *per annum* payment still has in its treasury some $7,000. Such surplus can, of course, be distributed annually among members on the basis of services rendered. Incorporation of the county society is a necessary step, since the corporation can then enter into a contract with the supervisors, and more especially since incorporation relieves the member physicians of any individual liabilities for acts of others.

County Secretaries' Conference

The annual conference of secretaries of the West Virginia State Medical Association will be held at the Association headquarters, Charleston, on Monday afternoon, December 29, 1930. The conference will open with a luncheon at the Kanawha Hotel at 12:15 o'clock, and immediately following the luncheon the secretaries will convene at the headquarters assembly room in the public library building. All secretaries of county societies in West Virginia are expected to be in attendance at this session.

While the program for the conference of county secretaries has not yet been completed, it is a surety that many important problems of the average county society will be discussed. The conference will follow upon the heels of the annual December council meeting, which will be held in the forenoon of December 29. The luncheon at the Kanawha Hotel will be in honor of both the councillors and the county secretaries, and it is understood that a number of the council members will remain over for the secretaries' meeting.

Antivivisection

A bill is now pending before the Congress of the United States which, if passed, will make it unlawful to use dogs for scientific experiments in the District of Columbia. The measure has already been reported upon favorably by the committee of the lower house—the first time in history that an antivivisection bill has ever received a favorable recommendation from a committee of either house.

If the pending antivivisection bill is passed, the fact that such a law was passed by Congress will form an entering wedge for the antivivisectionists. With the passage of this law, it is understood that its sponsors will enter the various states and ask for similar legislation. While we believe the measure will never become a law, it is well for the members of the medical profession to be on their guard. It is quite clear that the antivivisectionists are upholding the dog because of its universal appeal, and that they are hoping to win their fight through sentiment rather than through fact.

It is idle to discuss the results that would follow the passage of antivivisection legislation. The medical profession is well aware of what those results would be. Now is the time to take action toward avoiding such a calamity. It is suggested that every county medical society in the state go on record against the antivivisection bill and notify their respective congressmen of their action. An organized protest is one of the best methods of defeating undesirable legislation.

COMMUNICATIONS

Extramural Psychiatry

West Virginia Medical Journal,
Dr. James R. Bloss, Editor:

The phenomenally rapid growth of interest in all aspects of extramural psychiatry in recent years has created several situations of considerable gravity, of which the shortage of adequately trained personnel is by far the most pressing. The mounting interest of communities in child guidance and other types of mental hygiene clinics has already exhausted the never-sufficient supply of specially trained psychiatrists for this work, and unless physicians with the requisite training and aptitude can be secured in greater numbers, either the establishment of many new clinic projects will be delayed, or, worse, their functioning will be attempted by unprepared or poorly prepared staffs.

To assist in lessening some of this shortage of properly trained psychiatrists, The National Committee for Mental Hygiene offers fellowships toward the acquisition of the special preparation required. Details of these fellowships are contained in the enclosed announcement, a reproduction of which in the columns of an early issue of your periodical will be deeply appreciated in the interests of modern medical education.

These fellowships are designed to provide special training for physicians who have had previous hospital training in psychiatry, but who wish to prepare themselves for extramural work in the fields of child guidance, delinquency, education, dependency, and industry.

Fellowships are open to physicians who are under thirty-five years of age, graduates of Class A medical schools, and who have had at least one year of training in a hospital for mental disease maintaining satisfactory standards of clinical work and instruction. A longer period of hospital training is desirable.

Applicants able to meet these requirements will not be required to take competitive written or oral examinations. Selections will be made on the basis of length and type of previous training in formal psychiatry; on general fitness for the work contemplated; and (in most cases) on the results of a personal interview.

These fellowships cover a period of training approximately one year in length. During this training period trainees usually are assigned for three- to four-month periods at such places as the Boston Psychopathic Hospital; Judge Baker Foundation, Boston; Institute for Juvenile Research, Chicago, and other places of a similar nature, as well as to various child guidance clinics located in Cleveland, Philadelphia, and other cities. Assignments to these training centers are not definite, however, and assignment to any given place will depend upon the availability of instruction at such place, as well as the special needs of the individual trainee. Assignments are not made for more than three months in advance, and adherence for the year's training period to a fixed program in advance is impossible.

These fellowships carry stipends at the rate of $2,000 to $2,500 for the twelve-month period. Applications need not be filed within stated periods, but will be received at any time. In the case of successful applicants, arrangements will be made to begin work whenever mutually convenient to the applicant and to the director of the training center to which the applicant is first assigned.

Applications or inquiries for further information should be sent to Dr. Frankwood E. Williams, Medical Director, National Committee for Mental Hygiene, 370 Seventh Avenue, New York, N. Y.

Sincerely yours,

FRANKWOOD E. WILLIAMS, M.D.
Medical Director.

COUNTY SOCIETY NEWS

Fayette County

The Fayette County Medical Society held its regular meeting November 11, 1930, in the auditorium of the new high school building in Montgomery. The scientific program consisted of the following, and was found very interesting and was freely discussed by the members of the society:

Dr. C. L. Woodbridge, of the Montgomery Clinic and Coal Valley Hospital staff, presented a paper on "The Treatment of Perforative Appendicitis." In this paper Dr. Woodbridge emphasized the fact that the treatment of such patients is essentially from a chemical standpoint, and that blood transfusions are of the utmost importance in such cases.

Dr. R. P. Woods, of Oak Hill, and Dr. Frank S. Harkleroad, of Harvey, presented a paper with a case report on "Diseases of Allied Conditions of the Urinary Tract." In this case they presented an interesting case of a child twelve years of age, running a blood-pressure, systolic 205, diastolic 110, with no definite kidney or other lesion to verify it. It was brought out in the discussion that a suprarenal neoplasm should be considered.

C. W. STALLARD, Secretary.

Mercer County

There was a meeting of the Mercer County Medical Society on October 23, 1930, held in the Municipal Building at Bluefield. There were twelve members and three visitors present, the attendance being small because of very inclement weather.

Dr. J. E. K. Flannagan, of Mount Regis Sanatorium, Salem, Va., read a paper on "Tuberculosis and the Family Doctor." Dr. Flannagan's paper was a common-sense presentation of the subject, and was very practical and to the point. He portrayed the attitude that the general practitioner should have toward his patients with tuberculosis, and stressed the fact that the general practitioner was the man that was largely responsible for the coöperation and ultimate recovery of these patients.

The paper was discussed by Drs. Rogers, Hoge, and Houston St. Clair, with Dr. Flannagan closing the discussion.

There was an impromptu report of a case of agranulocytic angina by Dr. Houston St. Clair. Dr. Hoge discussed this, including a case of his own.

A resolution of sympathy to Mrs. Manuel Justo, the wife of the late Dr. Manuel Justo, was passed.

R. R. STUART, Secretary.

Ohio County

Dr. Harland W. Long, psychiatrist of Pittsburgh, Pennsylvania, was the scientific essayist at the November 14 meeting of the Ohio County Medical Society, which was held in the Elks' Club at Wheeling. He presented a highly interesting paper on "Mental Hygiene of the Pregnant Mother." Discussion on the paper was opened by Dr. E. L. Armbrecht and Dr. M. B. Williams, both of Wheeling. The paper was then thrown open for general discussion, after which Dr. Long closed.

Dr. J. O. Rankin, of the Orthopedic Division of the Wheeling Clinic, appeared on the program of the American Clinical Orthopedic Association, which met in Columbus on November 1. Dr. Rankin conducted a dry clinic at this meeting, the type of cases presented exemplifying results to be obtained in various types of reconstructive surgery.

H. C. HARPER, Secretary.

Tri-County Meeting

The Monongalia County Medical Society was host to the Tri-County Medical Society meeting which was held at the Elks' Home at Morgantown on the evening of November 25. The Tri-County society is composed of members of Monongalia, Harrison, and Marion counties, and a large number of doctors turned out for this meeting. The meeting opened with a banquet at 6:30 o'clock, and this was followed by a scientific presentation at 8 o'clock by Dr. Allan Winter Rowe, professor of medicine of Boston University. Dr. Rowe read an excellent paper on "Constitutional Factors in Human Sterility."

Conjointly with the scientific meeting, the ladies of the Auxiliary presented an entertainment for the doctors' wives in attendance at the meeting. The two meetings were followed by an informal dance in the ballroom of the Elks' Home, which was well attended and greatly enjoyed by the doctors and their wives.

G. R. MAXWELL, Secretary.

Kanawha County

Two interesting meetings of the Kanawha Medical Society were held during the month of November, both in the public library building in Charleston. The first was held on November 6, and the entire program was presented by the new members of the society. Dr. W. E. Hoffman, of Charleston, presented a most interesting paper on "Placenta Prævia." Dr. J. H. Phillips, of Charleston, gave a paper on "Amytal as a Basic Anesthesia," and Dr. J. E. Rucker, of Charleston, gave a paper on "Avertin Anesthesia." All of these papers were of considerable merit and interest and were discussed by the members in attendance.

The November 18 meeting included a four-reel motion picture on traumatic surgery, which was rented by the society for the purpose of showing at this meeting. The program was presented by Dr. Russel Kessel, of Charleston, who read an excellent paper on "Coöperation of Hospitals and Surgeons with the West Virginia Compensation Department." His paper was followed with an interesting discussion by Attorney Arthur Dayton, of Charleston, on "Medico-Legal Matters."

Both of these meetings were well attended, and there was great interest in the two programs. The winter program of the Kanawha Medical Society has already been completed and a number of interesting meetings are scheduled.

D. N. BARBER, Secretary.

Wyoming County

Final plans to incorporate the Wyoming County Medical Society as a constituent organization of the West Virginia State Medical Association were made at a meeting of the society held at the Mullens Hospital, Mullens, on the evening of November 18. Dr. W. E. Vest of Huntington, president, and Mr. Joe W. Savage of Charleston, secretary, of the state association, were present and outlined the steps necessary for the proper formation of the society. Dr. Vest gave a most interesting talk on the aims and purposes of a county society, and Mr. Savage talked on the work of the state association.

The scientific program was presented by Dr. W. H. Wallingford, of Princeton, who gave an interesting paper on "Blood Transfusions." Dr. Ward Wylie, of Mullens, president of the society, read a paper on "Causes and Treatment of Urticaria," which was written by Dr. Zed Bee of Princeton. Dr. Bee was unable to be present at the meeting. Both papers were discussed at considerable

length and a number of important points were brought out in the discussion.

Those present at the meeting included Dr. Wylie, who presided; Dr. K. G. Khorozian, Dr. J. F. Biggart, Dr. H. A. Porter, Dr. B. O. Myers, and Dr. B. W. Steele. Visitors were Dr. Vest, Dr. Wallingford, and Mr. Savage.

B. W. STEELE, Secretary.

Harrison County

The importance of taking steps to reduce pollution of the Clarksburg water supply and the inadequacy of the present sewage system were emphasized in the report of a special committee on sewage disposal made to the Harrison County Medical Society at the Stonewall Jackson Hotel on the evening of November 6. The committee was composed of Dr. B. F. Shuttlesworth, Dr. J. F. Williams, and Dr. S. L. Cherry. In addition to the report of this committee, Dr. H. H. Haynes made a report for the committee on medical economics. Dr. B. S. Brake, president, presided at the meeting.

J. F. WILLIAMS, Secretary.

PUBLIC HEALTH

Physical Impairments

The United States Public Health Service recently published the report of a study of the relation of physical impairments and broad occupational classes, based upon the medical examinations of more than 100,000 native-born adult white males, conducted by 9,000 different physicians in all parts of the country.

Although the association of economic or social status and health has been given detailed consideration in the past, the studies have related to sickness or death. Up to the present time this picture has been inadequate because it has not included information as to the physical conditions of persons able to be about and at work—that is, when the conditions which lead to sickness and possible death are in their incipiency. The purpose of this investigation was to determine whether the same relationships would be found in physical condition as measured by the periodic health examination.

The groups used for the comparison were: (*a*) agricultural; (*b*) professional; (*c*) business; and (*d*) skilled trade. It should be pointed out that the age distribution of these four groups was practically identical, so that the rates of impairments for all ages could be used rather generally in the comparison.

Since the examinations were of persons who had carried life insurance and had accepted the offer of insurance companies for free health examinations, it would be expected that the lower social levels would not be adequately represented, and, therefore, that the differences found would be a minimum expression of the relationship.

In spite of this fact, the general impression left by the various comparisons was a definitely higher rate, on the average, in the skilled trade group. The make-up of this group is of some interest. Of the 16,714 persons analyzed, 3,409 were classified as machinists; 1,985 carpenters, 1,577 tailors, 1,256 printers, 1,235 electricians, 998 plumbers, 836 chauffeurs, 834 barbers, 829 painters, 712 butchers, and 3,043 others. These are groups of persons where we would normally expect a somewhat higher rate of mortality than among professional persons. It is a point of great interest that the same tendency can be shown to exist in records of physical examinatons. The skilled trade group stands out distinctly from the others considered. Its rates of impairments are excessively high for eye and ear conditions, teeth defects, heart and pulse, and many miscellaneous impairments. Possibly the only condition which showed a significantly low rate for the skilled trade group was that of corrected defective vision, a reflection of less care of the eyes.

For most conditions, the agricultural group would seem to have rates definitely below the average for all examined, but there are important exceptions, notably for teeth, stomach, and abdominal conditions, and the genitourinary system. The rates are low for diseases of the eye and ear, nose and throat, heart and pulse, blood vessels, and many miscellaneous conditions.

The professional group conforms more nearly to the average for the entire population considered. Few conditions are found to have excessive rates, but, on the other hand, there are not very many with particularly low rates.

The business group approximates the average for the entire population, considered in nearly every respect. A study of three subdivisions of this group (namely: executives, merchants, builders, etc.; salesmen, and clerks, including clerks in stores) brought out the same tendencies as in the group as a whole. There were no significant differences, once allowance had been made for natural differences in age in these three subdivisions.

Generally speaking, the characteristic age curves

of specific impairments were reflected in the four broad occupational groups.

The study is one of a seres being made in co-operation with the Milbank Memorial Fund, based on medical examinations conducted by the Life Extension Institute.

Recoveries From Leprosy

A report recently issued by the Public Health Service gives an interesting summary of the value of medical treatment for leprosy at the National Leprosarium, which is conducted by the Public Health Service at Carville, La. More than three hundred lepers, men, women, and children, are under treatment there.

During the past ten years, 65 lepers have been discharged from this hospital as apparently recovered from leprosy and no longer a menace to the public health. The average period of hospital care varied from five to nine years. The shortest period of treatment was 1½ years and the longest was 17 years. Fifty-five of these patients received crude chaulmoogra oil by mouth, and sixteen of this group received no other medicine. Twelve received benzocaine-chaulmoogra oil by intramuscular injection, and four of these received no other medical treatment. Twenty-one received the ethyl esters of chaulmoogra oil by intramuscular injection, and eight of these received no other medicine.

The basic treatment of leprosy is similar to that for tuberculosis, and all lepers at the National Leprosarium, no matter what medicines are given, follow a sanatorium regimen of food, fresh air, and rest, almost identical with that prevailing in a tuberculosis hospital.

Health of Negroes

On call of the surgeon general of the United States Public Health Service, a conference of health and welfare workers was held in Washington on October 29, 1930, to consider ways and means of controlling the high mortality of colored people in rural communities and congested cities.

The meeting was called to order by Dr. Taliaferro Clark, acting surgeon general, in the absence of Surgeon General Cumming, and was presided over by R. C. Williams, assistant surgeon general. Dr. Robert R. Moton, principal of Tuskegee Institute, and Dr. Monroe N. Work, director of the department of records and research of the institute, advised the conference that the National Negro Health Week, founded by the late Booker T. Washington, had done much good in teaching the negroes habits of better living, but now needed substantial aid in achieving its greatest usefulness as an agency for the general welfare of all Americans.

An executive committee to consider the year-round health movement was named by the conference. The members of the committee are Dr. George W. Bowles, chairman of the executive board of the National Medical Association, chairman; Dr. Numa P. G. Adams, dean of the medical school of Howard University; Dr. M. O. Bousfield, representing the National Negro Insurance Association; Dr. Monroe N. Work, Tuskegee Institute; and Assistant Surgeon General R. C. Williams, of the United States Public Health Service.

Immediate plans were made for observance of the next National Negro Health Week, which includes the birth date of Booker T. Washington, April 5.

Other health and welfare leaders attending the conference were: Assistant Surgeon General C. C. Pierce, Dr. A. M. Stimson, medical director, and Dr. Roscoe C. Brown, of the United States Public Health Service; Inez L. Cadel, National Organization for Public Health Nursing; I. Malinde Havey and Margaret Reid, of the American Red Cross; Ethel Perrin, American Child Health Association, New York; Dr. A. B. Jackson and Dr. M. O. Dumas, Howard University; Wiley A. Hall, National Urban League, and W. R. Johnson, Negro Organization Society of Richmond, Va.

Automobile Accidents

The Department of Commerce announces that during the four weeks ending October 4, 1930, seventy-eight large cities in the United States reported 741 deaths from automobile accidents. This number (741) compares with 753 deaths during the four weeks ending October 5, 1929. Most of these deaths were the result of accidents which occurred within the corporate limits of the city, although some accidents occurred outside of the city limits.

For comparison, the number of deaths due to automobile accidents within city limits is desirable. Such figures are available for the four-week period ending October 4, 1930, and for the corresponding four-week period of 1929 for all of the seventy-eight cities, the four-week figure in 1930 being 598 as contrasted with 587 for the corresponding four weeks in 1929.

Considering by four-week periods since May, 1925, total deaths from automobile accidents for

seventy-eight cities, regardless of place of accident, the lowest total (346) appears for the four-week period ending March 27, 1926, and the highest (842) for the four-week period ending November 2, 1929.

For the 52-week periods ending October 4, 1930, and October 5, 1929, the totals for the seventy-eight cities were, respectively, 8,661 and 8,209, which indicate a recent rate of 25.1 per 100,000 population as against an earlier rate of 24.2, or an increase of four per cent in the rate in a single year.

Three cities reported no deaths from automobile accidents for the last four weeks, while two cities reported no deaths from automobile accidents for the corresponding period of 1929.

For the last four-week period, reports as to whether deaths occurred from automobile accidents within city limits or outside were received from all of the seventy-eight cities reporting. In these cities, in this four-week period, the total number of deaths from automobile accidents was 741, but only 598 of these were due to accidents within city limits.

HOSPITAL NEWS

Changes in Hospitals

Hospital administration, as well as hospital construction, appears to be undergoing a transition pointing toward a greater accessibility of hospital care to the middle-class patient. One notable change is the tendency to break down the old hard-and-fast distinction between "private" and "ward" patient. Twenty years ago the patients of the typical hospital, very much like the passengers in a transatlantic liner, were segregated into two sharply defined classes between which the cleavage as to status, privileges, and type of care was almost absolute. Today the lines between these groups are giving way. Passengers in the "steerage" (that is, the ward) are beginning to receive some of the privileges and perquisites heretofore associated only with the "first cabin" (that is, the private pavilion), and a new "cabin class" (that is, the semi-private room and the small ward), intermediate in physical equipment and in priveleges between these two extremes, has made its appearance.

When attention is turned to the prices charged for hospital service, it is seen that at least two major elements of change are under way. First, an effort is being made to furnish patients of moderate means with hospital service at cost. A second and probably less significant element of change in connection with charges has to do with the so-called extra charges. It has been seen that, by and large, hospitals are not differentiating so clearly between patients of different classes in the matter of special-service charges as they are in the matter of basic daily rates. Hence the total bills of the patients occupying the less expensive types of accommodations are not as much smaller than the bills of the patients occupying the more expensive types of accommodations as would otherwise be the case. Nevertheless, by various devices, the existing uneven and more or less arbitrary incidence of the burden of special-service charges is, in some instances, being equalized. In certain cases, the hospital incorporates these services into its general care and includes a charge for them in its basic daily rates. In others, payment for a number of related special services—particularly laboratory service—are lumped together in a flat-rate service charge. And in a few hospitals, notably in connection with obstetrical services, a special all-round flat-rate service charge, including bed, nursing care, and "extras," is made. In other words, hospitals are centers offering a number of facilities and procedures both to the physician and to his patient. All of these together make up the service which the patient requires or at least should have available, and as a result the hospital rate structure is beginning to be modified.

Not the least striking elements of change in the hospital world are associated with the special financial arrangements that hospitals are making with their patients. The hospital of yesterday divided its patients, for the most part, into full-pay patients on the one hand and part-pay or free patients on the other. From the former it expected payments that were at least equivalent to the cost of their care, and, moreover, it expected that these payments would be made promptly and in full. From the latter—that is, the free or part-pay patient—it expected to receive little, if any, financial remuneration, and arranged for such payments as were made on the basis of expediency and of an often inexpertly applied philanthropy. This situation still applies to a large number of American hospitals—probably to most of them, when the smaller institutions are taken into account. However, there is evidence that a new administrative theory is being brought into play. In these institutions recognition is now being made of the fact that hospital care is often an emergency which most patients can not, or at least do not, provide for in advance. Various devices have been adopted to ease the financial burden of the patient in such circumstances and at the same time to assure to the hospital

as large a financial return as can properly be expected. It is particularly significant that, in such hospitals, adjustments of this kind are no longer being limited to members of the so-called poverty groups. It is, perhaps, even more signficant that the hospital world is beginning to be affected by one of the major economic phenomena of the current period—to-wit, the systematic practice of credit extension by means of installment payments.

A change seems also to be under way, pointing to closer coöperation between the physician and the hospital in their relations with the patient. In some cases, the fee which the physician charges to his less well-to-do patients is explicitly limited. In others, there is an informal understanding between hospital and physician to much the same affect. In a few cases, the hospital acts as agent for the physician in collecting his fees from his patients. The general import of all these arrangements appears to be that there is a slowly crystallizing recognition that the interests of hospital, physician and patient are best served where the patient's total financial outlay for his illness is considered as an economic unit and where some kind of agreement exists between all three parties concerning its amount and distribution.

This study may be concluded with an observation that strikes a different note from that characterizing the earlier portions of this chapter. It can be put in the form of a question: Could the patient of moderate means pay for his hospital care, even if the entire hospital world should adopt every one of the new policies outlined in this study? Hospital service is expensive, and developments in medical science and hospital management may add new elements of cost. It is possible, by increased efficiency of administration, to reduce costs somewhat. It is also possible, as much of the foregoing study has suggested, to equalize the burden of hospital costs or to lessen their impact upon individual patients. But, when all is said and done, the question still remains: Can the patient of moderate means normally pay for his hospital bed, his "extras," his special nurse and his physician out of his own individual income? It may be that he can. Some hospitals, at least, believe that he can, and have set out to give him service on this assumption.

It may be that a satisfactory elucidation of this fundamental problem will be available in the not too distant future. The hospitals offering their facilities explicitly to patients of moderate means will have accumulated a valuable fund of experience within a few years. Basic studies of hospital costs, of the distribution of wealth throughout the population, and of the possibilities of insurance against the expenses of sickness must be undertaken in order to throw light upon many issues that are now obscure. Both of these sources of information may provide the data upon which can be based a final answer to the question of whether the patient of moderate means can be given hospitalized medical service at a price which he can afford.—*From a Report of the Committee on the Cost of Medical Care, A. M. A. Bulletin.*

GENERAL NEWS

Hospital Association Meeting

The fifth annual meeting of the Hospital Association of West Virginia will be held at the Kanawha Hotel, Charleston, on December 8, 1930. Approximately fifty members and associate members are expected to attend. The program has been practically completed and will include Dr. M. T. MacEachern, of Chicago, who will be the principal speaker. All other speakers will be members of the Association. This list includes Dr. Harry M. Hall, of Wheeling, who will talk on "This Hospital Problem," and Miss May Maloney, of Fairmont, president of the State Nurses' Association, who will talk on the possibility of standardized nursing schools in West Virginia.

The meeting will open at ten o'clock on the morning of December 8, at which time the president's address will be delivered by Mr. J. S. Turk, of Wheeling. The morning and afternoon sessions will be given over to the presentation of papers and a discussion of the papers presented. The banquet will be held at six-thirty o'clock that evening, and Dr. James McClung, of Richwood, has already accepted an invitation to preside as toastmaster.

There has been a considerable revival of interest in the state hospital association during recent months, and an interesting gathering is anticipated. With the state legislature meeting in January, a number of legislative problems will be brought up for discussion. The Hospital Association is interested in legislation concerning a form of compulsory automobile insurance, and also in legislation to include hospitals in the state "hotel board-bill" law. It is hoped that both of these measures, in some form, may be enacted into law by the coming legislature.

Standards for Maternity Care

The standards for maternity care which have been prepared by the Committee on Maternity Care of the Children's Welfare Federation, in conjunction with a committee appointed by the New York Obstetrical Society, represent group thinking along lines of adequate care for maternity patients.

Careful observation of procedures and problems in a selected group of hospitals and agencies giving maternity care was made by Marion H. Douglas, R.N., secretary of the Committee on Maternity Care, and tentative outlines were prepared. These outlines were submitted to and discussed with representative groups and individual members of the 51 hospitals and agencies represented on the Committee on Maternity Care, of which Hazel Corbin, R.N., is chairman. They were also submitted to the committee appointed by the New York Obstetrical Society, composed of Dr. Ralph W. Lobenstine, chairman, Dr. George W. Kosmak, and Dr. O. Paul Humpstone, which met with the chairman and secretary at regular intervals to advise and to approve the standards.

The suggestions and corrections of these groups were incorporated in the standards. Continuity of service to the patient is the keynote emphasized in the standards. Content of service, qualification, and responsibility of personnel are equally stressed. The report includes prenatal care, adequate delivery service, after-care qualifications and responsibilities of personnel; space, equipment, and facilities, and suggested record forms.

Copies of the standards may be secured from the Children's Welfare Federation, 244 Madison Avenue, New York, N. Y.

Narcotic Drug Laws

The following communication, relating to the promotion of coöperation between the various state governments and the federal government to prevent the abuse of narcotic drugs, has recently been received from Dr. William C. Woodward, director of the bureau of legal medicine and legislation of the American Medical Association. Dr. Woodward's letter contains so much that is worth while that it is published herewith in full:

A letter was recently sent by this bureau to all of our state medical associations, relative to the influence that a state medical association can exercise in promoting coöperation between the state government and the federal government to prevent the abuse of narcotic drugs. As a result, inquiries have been received as to how an association can best proceed with respect to the matter. That question can be answered best by each state association for itself. For the assistance of the several associations, however, the following comments are submitted:

Coöperation in the execution and enforcement of state narcotic drug laws is now the legal duty of the federal officers charged with the execution and enforcement of the federal narcotic drug laws. On the part of the state governments, however, reciprocal coöperation is a matter only of good-will; it is not required by law. A state medical association, therefore, may, with advantage, do anything that can be done to bring about good-will on the part of the state government with reference to such coöperation. As a step toward that end, it might call the attention of the governor to the desirability of coöperation and offer the aid of the association in carrying out a coöperative program.

But good-will alone is not sufficient. Good-will, to be effective, calls for adequate state narcotic drug laws and adequate machinery for enforcing them. An investigation, made by the Bureau of Legal Medicine and Legislation several years ago, showed that most states have narcotic drug laws that can be made more or less effective, but only a few have state machinery for accomplishing that end. The prevailing rule seems to be for the state government to leave the execution and enforcement of state narcotic drug laws to local peace officers, without giving them adequate instruction and assistance in the discharge of their duties.

In some states, it is true, a state board or officer is charged with the duty of executing and enforcing the narcotic drug laws. Too often, however, the board or officer charged with that duty is not provided with adequate machinery for performing it. Under such circumstances, the specific assignment to a state agency of the duty of enforcing the state's narcotic drug laws may do more harm than good. Local peace officers may construe the assignment of that duty to a state agency as relieving them of all responsibility with respect to the matter.

A state medical association may well begin, it seems to me, by a study of the machinery, state and local, available for the execution and enforcement of the state narcotic drug laws.

Personally, I am inclined to believe that a state board or officer should be charged, not primarily with the duty of enforcing its narcotic drug laws, but with the duty primarily of seeing that they are enforced and helping in their enforcement when

necessary. The primary duty of enforcing the law should rest on the local peace officers and county attorneys throughout the state. These peace officers and county attorneys should be adequately instructed by the state board or officer charged with the duty of enforcing the narcotic drug laws as to what their duties are and how to discharge them. The state board or officer should be provided with a sufficient force of inspectors, analysts, clerks, and attorneys to enable it to help the local law enforcement officers by supplementary inspection service when needed, by analyses and by legal advice and assistance. The state agency, however, should supervise the work of local agencies to see that it is properly performed, and should stand ready to criticize in event of willful or negligent default on the part of the local officers.

Along with any inquiry that a state medical association may make into the adequacy of the machinery for executing and enforcing the state narcotic drug laws and for coöperation with the federal government in the execution and enforcement of the federal narcotic drug laws, the association might well inquire into the adequacy of the state narcotic drug laws, with a view to supplementary legislation, if needed.

As indicated in my recent letter, the American Medical Association is directly responsible for the provisions in the recently enacted federal narcotic service reorganization act that require the secretary of the treasury to coöperate with the states in the suppression of the abuse of narcotic drugs. That fact alone seems sufficient to justify the constituent associations of the American Medical Association in taking action to promote such coöperation.

Action by state medical associations will tend, too, to forestall such legislation as the Sheppard-Towner maternity and infancy act, providing for the taking over by the federal government, by purchase or otherwise, of the rights of the states to manage their internal affairs in the field of hygiene and public health.

Finally, in the present instance, coöperation between the states and the federal government will tend strongly to prevent the enactment of such legislation as that proposed by the late Representative Porter, and still pending in the House, H. R. 9054, under which the federal government would take away from each and every state its authority to say who may and who may not professionally use narcotic drugs, and vest that authority in a federal narcotic dictator.

A. M. A. Conference of Secretaries

The annual conference of secretaries and editors of the various state medical associations was held at the American Medical Association headquarters in Chicago on November 14–15, 1930. Dr. W. E. Vest, of Huntington, as a member of the board of publishers, represented the WEST VIRGINIA MEDICAL JOURNAL, and Mr. Joe W. Savage, state secretary, represented the Association. Reports of the meeting indicate that it was one of the best ever held.

The meeting was called to order by Dr. Edward B. Heckel, chairman of the board of trustees of the American Medical Association. The speakers included Dr. William Gerry Morgan, president of the American Medical Association; Dr. E. Starr Judd, president-elect; Dr. R. L. Parker, of Des Moines, Iowa; Dr. F. C. Warnshuis, of Grand Rapids, Mich.; Dr. R. G. Leland, Chicago; Dr. W. C. Rappleye, of New Haven, Conn.; Dr. E. A. Meyerding, of St. Paul; Dr. W. H. Ross, of Brentwood, N. Y., and Dr. Frank C. Hammond, of Philadelphia.

Among the subjects discussed at the conference were: radio, health insurance, state examining boards; coöperation between medical, public health, and educational organizations, public relations committees, state medical journals, and service for the indigent through contract with the county medical society.

Training of Nurses

Physicians are stressing more and more the need, in present-day medicine, for the nurse who fits the case—that is, for nurses who have a firm foundation of specific and sufficient training in the particular types of disease they may be called upon to care for.

This growing demand for specialized nursing care in pediatrics, orthopedics, and other branches of medicine, is evident in the findings of the Committee on the Grading of Nursing Schools, which is studying the problem of educating the nurse to meet the requirements of patients and doctors.

Typical of this demand is the discussion, in the most recent report of the College of Surgeons on Hospital Standardization, of the minimum requirements of a hospital department for the treatment of eye ,ear, nose, and throat diseases.

"In the work of these specialties," the report states, "the results produced so often depend on intelligent coöperation between the physician and the nurse that a high standard of nursing service is absolutely essential. . . . It should be done by women

who are specially trained in this work, and particularly competent to intelligently carry on the technique and recognize untoward signs and symptoms in the nursing of the patient."

At least fifteen per cent of all types of physicians, including the general practitioners, of a representative group of 4,000, want the nurse to have familiarity with a particular disease, it was found by the Grading Committee. The proportion, when the physicians were grouped by speciatlies, was found to be far higher than this among the neurologists, the obstetricians, and the ophthalmologists. This is significant, in view of the fact that recognition of the value of specialized nursing care in treating particular diseases is comparatively recent.

Happiness in Children

Modern parents are frightened by the emphasis that has been placed on the problems of child rearing in the recent development of interest in child psychology, thinks Jessie C. Fenton, herself a child psychologist of note, writing in *Hygeia*.

It is very fine that parents have realized the responsibility and the subtleties of parenthood, but they are in danger of losing sight of the fundamental objective—happy children—Mrs. Fenton fears. No matter what care parents may take to overcome their children's faults and maldevelopments, their efforts are worse than wasted if, by their very concern, they rob the children of happiness.

Certain essentials in the making of happy children are discussed by Mrs. Fenton. Health is, of course, essential; but for the moment that is taken for granted. She is speaking here of the mental and emotional factors of happiness.

The happy child should have plenty of interests, activities, stimulation, and curiosity. His parents foster his natural enthusiasm for discovery, for mental activity. They suggest, but they do not force. They applaud, but do not urge.

The happy child has friends and a chance to learn the give-and-take of unself-conscious contact with his fellows. The earlier and freer are his opportunities for wholesome social contacts, the easier it will be for him to fit into a world that is full of other people.

Security is an important item for a child's happiness. The happy child never doubts that he is wanted and loved and will be cared for. Above all, the happy child is allowed to be himself. His parents do not try to make him into the kind of child they might have preferred to have, but take him as he is—an individuality in his own right, not belittling or disparaging him because he happens to be a child, nor yet elevating him to a false position of specialized attention or concern.

Funeral Charges *

An impartial survey of all the social and economic factors which determine funeral costs was made in the years 1926 to 1928. It sought first to determine definitely and objectively whether or not funeral charges fall with undue severity on those who are least able to bear them. From reliable sources were collected 15,100 samples of funeral expenditures among various economic groups and from typical communities. These were obtained from the following sources:

1. From 2,830 decedents' estates in New York, Brooklyn, Chicago, and Pittsburgh.
2. From 8,828 industrial policyholders from various sections of the United States.
3. From 3,123 claims for burial expenses filed with the United States Veterans' Bureau.
4. From 319 widows applying for pensions to the New York Board of Child Welfare.

All economic groups, from dependent widows to the wealthiest families in our largest cities, and every section of the country, both urban and rural, were represented.

There was a great disparity in the proportion of the estate absorbed by funeral charges. For estates of less than $1,000, funeral expenses absorbed 52.2 per cent of the assets in New York and 62.1 per cent in Brooklyn, while in estates valued at over $100,000 less than 10 per cent of the estate was absorbed. The average funeral bill in all New York and Brooklyn estates was $772; in Chicago estates it was $480, and in Pittsburgh estates, $460.

The average funeral charge for 7,871 adult industrial policyholders insured by the Metropolitan Life Insurance Company was $363. The wide range in funeral charges in various states is shown by the fact that the highest average, $484 for New Jersey, is two and one-half times the lowest average, $194 for North Carolina. In general, funeral charges are highest in the east and lowest in the south, with the mid-western and central states falling between these extremes. Ohio, however, with an average bill of $415, outranks New York. In cities, funeral expenses conform with the same general tendency. Newark, with an average of $493,

* Prepared by John C. Gebhart, former director of the Burial Survey, for the Committee on the Costs of Medical Care.

Philadelphia ($483), and New York ($432) far exceed southern and mid-western cities. Nashville is lowest in the list of large cities, with an average of $233.

Under certain conditions, the United States Veterans' Bureau awards $100 for the burial expenses of veterans. Over 15,000 claims are reviewed annually. They come from all sections of the country, both urban and rural. Three thousand one hundred twenty-three of these claims, selected at random, were examined. In towns under 10,000 in population, funeral expenses average $241; in cities of from 10,000 to 250,000 they average $270, and in cities of over 250,000 they average $336. This tendency is perhaps what should be expected, for items such as land values, wages, rent and taxes are higher in larger cities.

With the coöperation of the New York Board of Child Welfare, 319 funeral expenditures of dependent widows were examined. Funeral expenditures were much higher among the Irish and Italians than among the Jews. Irish widows spent on the average $452, which absorbed 44 per cent of the net estates, while the Italians spent $421, representing 50 per cent of the net assets. Among orthodox Jews, funeral customs are exceedingly simple. Funeral expenditures by Jewish widows averaged only $247.

Material submitted by thirty-three family welfare societies and by the study of dependent widows showed that families on the low-income level frequently spend large sums on an extravagant funeral and, a few weeks later, apply to a charitable agency for relief.

From the case material submitted by the family agencies, it is difficult to say whether extravagance in funeral expenditures is due more to an unreasonable desire for elaborate display on the part of the family than to extortion and overselling on the part of undertakers.

The small neighborhood undertaker, attempting to make a living out of a small volume of business, is more likely to take advantage of poor, ignorant and defenseless familes than the large establishment equipped to handle a large volume of business.

In the purchase of funerals, no adequate trading principle has yet been evolved. On the one hand, the poor and ignorant family, in its hour of grief, is disposed to spend all the insurance and other savings on an elaborate funeral, in a pathetic gesture of love and respect. On the other hand, certain types of undertakers ascertain the amount of insurance and extract all they can, regardless of the needs of the family or the value of the service and merchandise which they furnish.

When the family case worker is able to intervene and can point out the needs of the family, she can usually arrange a funeral at a moderate cost. Unfortunately, however, in most cases the family does not apply to the agency until its insurance money has been exhausted in the payment of the funeral bill and other debts.

The burial industry is unique. It is probably the only industry in which the demand is fixed by natural causes. It is obvious that no amount of advertising or sales efforts can increase the demand for funerals. During the last twenty-five years, while the population has steadily increased, the annual death rate has dropped sharply. The net result is that the annual number of deaths, with a few minor fluctuations, has remained practically stationary. Yet it is during this period, with a practically stationary demand, that the burial industry has had its greatest expansion, both as regards the number of persons and firms engaged and the total money volume of business transacted.

In 1900, according to the federal census, there were 16,200 undertakers in the United States; in 1920 there were 24,464, an increase of 51 per cent. The estimated number of deaths in 1900 was 1,352,703; in 1920 it was 1,384,078, an increase of 2.3 per cent. During a period of twenty years, therefore, the number of undertakers increased twenty-five times as fast as the total volume of business. Moreover, the business is by no means evently distributed among undertakers. It was found that in New York City eight per cent of the undertakers handle forty-four per cent of the business. The balance, 92 per cent, have 25 funerals a year, and are therefore trying to make a living out of two funerals a month.

The "marginal" undertaker is, therefore, an important factor in the problem of high funeral costs. This was amply borne out by an elaborate study of the costs of operating funeral establishments. The smaller firms are obliged to charge more than the larger ones.

When an industry is confronted with a fixed or diminishing volume of business, either higher-priced goods must be sold to the same number of customers or the volume of business must be concentrated in fewer hands, through the elimination of uneconomic units. There has been practically no elimination of

marginal establishments, and the industry has met the dilemma by persuading the public to purchase each year more expensive merchandise and more elaborate funerals. The casket manufacturers have made it possible for the small undertaker to survive, chiefly by helping him to sell more expensive goods. In 1889 the average wholesale value of burial merchandise was $10.11 per funeral; in 1927 it was $55.38. Even allowing for a 50 per cent decrease in the value of the dollar, this is an increase of 173 per cent in thirty-seven years.

To reach the public through the undertaker, certain trade practices have grown up which are wasteful and have led to many abuses. In large cities, casket manufacturers maintain showrooms, to which the undertaker, particularly the one with little volume, brings the family to select a casket and other paraphernalia. A salesman for the casket factory, not the undertaker, usually makes the sale and sets the price. The mark-up price may vary from 300 to 500 per cent of the wholesale value, and is usually enough to yield a good profit on the funeral despite the small volume of business of the small undertaker. Some manufacturers, however, mark retail prices in plain figures, and refuse to be a party to a sliding scale of prices. Casket houses in some cities also rent paraphernalia and hire out personnel to undertakers with no establishments of their own. This practice also makes it possible for the undertaker with little or no investment to survive in spite of competition.

Excessive funeral expenditures in this country are due chiefly to two factors: (*a*) the desire on the part of the family for an elaborate funeral, either as a token of respect and affection for the departed, or to satisfy the demands made by the conventions or social and religious traditions of the group, or "to impress the neighbors," and (*b*) the lack of organization and waste in the funeral industry. Even the extravagant charges on the part of certain undertakers are largely due to an effort to make a living out of a very small volume of business.

In general, operating costs and prices to the public are lower in "complete" establishments doing a large volume of business than in establishments with small volume.

It is apparent that funeral prices can not be greatly lowered until the volume of business, which is fixed by the death rate, is concentrated in fewer hands. This applies both to funeral directors and to manufacturers of burial goods.

Health Association Meeting

Dr. A. D. Knott, of Parkersburg, was elected president of the West Virginia Public Health Association at the closing session of the fifth annual joint meeting of the association and the state health officers' conference in Morgantown on November 22, 1930. Dr. Knott formerly was professor of preventive medicine of the University College of Medicine, Richmond, Virginia, and now is director of the Wood County health unit. Other officers elected included E. S. Tisdale, Charleston, first vice-president; Dr. W. J. MacDonald, Wellsburg, second vice-president, and Dr. David Littlejohn, Charleston, secretary-treasurer.

Those who were chosen on the executive council of the association were: Dr. J. E. Fisher, New Cumberland; Miss Caroline Kidder, Romney; Dr. V. A. Selby, Clarksburg, and Miss Jess Cunningham, Beckley. Dr. W. T. Henshaw, state health commissioner, was reëlected member of the governing council of the American Public Health Association, with Dr. David Littlejohn as alternate.

State Meeting, May 19–21, 1931

The sixty-fourth annual meeting of the West Virginia State Medical Association will be held at Clarksburg on May 19 to May 21, 1931. This date was recently agreed upon and fixed by the committee on scientific work and the members of the Harrison County Medical Society, which will be the host society next year. The meeting will fall three weeks in advance of the American Medical Association meeting in Philadelphia, which is scheduled for the week of June 8, 1931.

The work of preparing the program for the 1931 meeting has already been started by the scientific committee, and an excellent array of local and outside talent is expected.

Founder's Day

Founder's Day of the ninety-third session of the Medical College of Virginia will be observed at Monumental Church, Richmond, on December 1, 1930, beginning at 12 o'clock noon. Dr. William John Gies, professor of biological chemistry, College of Physicians and Surgeons, New York City, will speak on "Progress in Health Service." The program will cover one hour, and the academic procession, including the board of visitors, invited guests, faculty, and students, will be formed at McGuire Hall.

More About the Costs of Medical Care

The Committee on the Costs of Medical Care has recently issued a pamphlet in which is reported a study of the medical service offered to its employees by the Endicott-Johnson Corporation, tanners and manufacturers of shoes, employing more than fifteen thousand people, or an aggregate employee populaton, workers and their families, of 41,121 to whom the service is available. The service includes everything required in the way of medical or surgical treatment, dental services, physiotherapy, drugs and appliances, spectacles and artificial teeth, nursing, hospital care, etc. There are employed 28 physicians, 4 dentists, 5 dental hygienists, 2 physical therapists, 67 trained nurses, 4 bacteriologists, 4 pharmacists, 17 technicians, 16 clerks and office assistants.

The cost of this service for 1928 was approximately $900,000. Of this amount, $161,207.19 was paid to full-time physicians on the staff and $38,878.50 to private practitioners on a fee basis.

Although this service was available to 41,121, there were only 35,181 who used it. It is stated that the cost per individual for the 41,121 was $21.81 per year; but the cost per individual for the 35,181 who used the service was $25.49 per annum. One may easily conclude that the cost per individual for 41,121 people, if all had used it, would have been $25.49 instead of $21.81, or at any rate something would necessarily be added by the additional service required for 6,000 people.

It is interesting to note that, of the total cost, only $200,085.69 was for the services of physicians, or a per capita cost of $5.69 per annum for those who used the service, or $4.87 per capita for the whole employee population of 41,121.

There are some desirable items of information lacking in this report. For instance, it might be of some importance to know how this service is supported; whether or not the cost is borne entirely or partially by the corporation; whether or not the employees met all or part of the expense; whether or not the assessment is compulsory; whether or not assessments are proportioned to the salaries or wages or to the number of dependents of each employee.

The report states that none of the physicians on the Endicott-Johnson staff received less than $3,000 and none more than $12,000 per annum. It might be worth while and of some interest to know if these physicians are paid regular salaries or if their incomes are based upon a per capita rate of service or upon service fees.

There were 15,230 employees, and if the cost of the service is borne by them alone the cost will be nearly $4.97 per month per capita. If the cost is assessed to each employee according to the number of his dependents, then the assessments of a man with a wife and one child would be $5.45 per month, of which $1.19 goes to the physicians for their services.

The report shows that the staff physicians received $161,207.19, and that they made 87,400 house calls and received 118,740 office visits. Assuming that house calls should be estimated at twice as much as office visits, the physicians received $1.10 for house calls and 55 cents for office visits, provided no extra charges are allowed for surgical, obstetrical or other attendance. However, it is probable that the staff is really a group of specialists and practitioners, so that when the fees or salaries of the specialists are deducted from the total amount paid the staff the prices for home and office calls would be considerably below the above estimate.

Presumably the findings in this survey have some bearing on the problem of the cost of medical care. At least, one may learn that a tolerably efficient and complete medical service can be given to approximately 35,000 people at a per capita cost of approximately $25.00 per annum. Presumably this is lower than the average cost to those dependent upon private practitioners for their medical attention. At any rate, the pamphlet states: "At present it is impossible to ascertain the source of all the economies which seem to be achieved. Subdivision of function relieves the skilled professional worker from the necessity of performing subsidiary and routine tasks; overhead costs are reduced by means of modern business devices, by large-scale buying, and by the continuous employment of professional, technical, and clerical personnel."

The outstanding source of the economies referred to is not mentioned, unless it was supposed to be included under the head of "large-scale buying," for the differences between the retail price and the wholesale buying figures of the medical services utilized by this corporation, even calculating surgical, obstetrical and special attendance under the head of house and office calls, is just a little matter of $338,472.81.—*Kansas Medical Journal.*

Prospective Legislation

The 1931 session of the West Virginia legislature will convene in Charleston in January. The session promises to be of great interest, and the West Virginia State Medical Association is looking forward to the usual battles that are fought every two years. Fortunately, the Association will have two stalwart members of the lower house to champion the cause of organized medicine—Dr. B. S. Rankin of Kingwood and Dr. M. H. Tabor of Crumpler. Both Republicans, they survived the Democratic landslide of last November 4.

In an effort to acquaint the Association members with some of the measures that will come up in January, the JOURNAL lists below a few of the bills that would benefit the profession:

1. A bill, sponsored by the West Virginia State Medical Association and the Hospital Association of West Virginia, will be introduced in an effort to include hospitals under the protection furnished by the hotel "board bill" law. Such legislation would make it a misdemeanor to willfully "skip" a hospital bill, and would aid materially in protecting hospitals against fraud.

2. A bill to provide some form of so-called compulsory liability insurance on all automobiles. This bill will be sponsored by the Association jointly with the West Virginia Automobile Club. Such legislation would create available funds to take care of physician's and hospital fees in all automobile accident cases. While the idea of such legislation is new, it has been successfully worked out in other states. It will never pass, however, until there is a decided public clamor for such a law.

The Association is not so much interested in securing new legislation as it is in maintaining the present provisions of the medical practice act. The Association's legislative fight is nearly always defensive. As a matter of fact, West Virginia is recognized as having one of the best medical practice acts in the United States today. This is partly due to the efforts put forth by the Association in years gone by and partly due to the defensive battles of recent years to preserve that which we already have. At every session of the legislature, bills are offered for passage that attempt to break down the medical practice act. Below is listed a brief survey of some of these measures:

1. A bill that would countenance the acceptance of fees by faith healers or by those who profess to be faith healers. Such legislation would make it possible for every person in West Virginia, regardless of age or education, to open an office for the practice of medicine under the guise of faith healing.

2. A bill that would eliminate the two years' academic requirement for chiropractors. This legislation is sponsored by the chiropractic schools, seeking a field for their graduates.

3. A bill to allow second- or third-year medical students to practice medicine in certain restricted rural areas. This bill has been introduced at both the last two legislative sessions, apparently with the idea of "helping out" the farm population. The Association maintains that West Virginia farmers are entitled to as good medical service as any one else.

The Capitol Cornerstone

It will be of interest to the medical profession of the state to know that a directory of the members of the West Virginia State Medical Association was placed in the cornerstone of the new state capitol building, which was dropped in place on November 5, 1930. A copy of the license issued by the public health council was also placed in the copper box, together with a state health department birth certificate. The certificate was No. 29129, and was issued to Gene Stanley of Cass, Pocahontas county. Dr. W. H. Hannah, of Cass, was the attending physician.

The Coroner's Office

The office of coroner is out of date and should be replaced by a modern system in which a medical examiner does the medical work and the legal duties are transferred to other agencies, in the opinion of Dr. Oscar T. Schultz, who tells of the origin of the office in a recent issue of *Hygeia*.

The coroner's office was transplanted by the colonists of America when they came from England, where it has a history dating back at least to the year 1100. The early coroner was an officer of the crown, appointed to safeguard such revenues as might fall to the king. These included the forfeited property of felons, treasure-trove, the wreckage of ships, and such valuables as might be found on the bodies of unknown dead. It was from this rite of the search of unknown dead that there grew the duty of investigating deaths the cause of which was unknown or might have been due to violence, a duty that in modern times has become the most important one of the office.

FROM OTHER JOURNALS

Food Faddists

Statisticians have enjoyed the memorable distinction of the superlative in prevarication—"liars, d— liars, and statisticians." In grades of dumbness in like ascent the banner for excellence goes to food faddists. Unfortunately, the management of a most worthy milk-products firm will not read these lines. Few physicians will hesitate to lend full support.

A recent comment in a magazine states that no one should presume to write an editorial unless he feels and thinks deeply upon the subject treated. Well, here goes: I believe in food—three times a day. I agree with a somewhat obese confrère who says, "Eating is one of our greatest indoor sports." It is possible to even go further: The good old summertime picnic, with its ozone, scenery, and clutter of indigestibles, is far from an affliction, and invites God-given rest to an overwrought brain, even though it may clog up a burdened liver.

Need I describe the paid minion assaulting a series of luncheon-club groups and culinary assemblies, not to mention our schools, with the absurd statement that everything we are depends upon the food we eat? "Tell me what a man eats for breakfast and I can tell you the reaction he has throughout his day," thunders this oyster. "Look to the cause, gentlemen—if you ever expect to empty our asylums and almshouses, overcome our appalling illiteracy and helpless inefficiency, then learn first to choose your own food and that of your children!"

It is almost a calamity that vitamins have been scientifically exploited, the pseudo-scientific food-vendor has taken such horrible liberties with them. Man, with his magnificent adaptability to food, can live in almost any part of our known world. Look at the infinite variety in his diet, adapted, as it must be, both to his needs and circumstances. And do not forget how gloriously the much-cussed human economy adapts itself to definite poisons, albeit some of these are presently mollified by "toasting" and ultra-violet exposure! Aside from early life, it is fair to state that any adult will have a strenuous task evading all needful vitamins in any half-reasonable diet. Appetite and food enjoyment—one of our gretaest boons in a neurasthenic age—must not be harassed by a flood of senseless taboos and "don'ts." Gourmands and human hippopotami deserve no commendation, but even at that they only hasten to Elysian fields. There they will not be annoyed by the presence of vitamin cranks huckstering cottage cheese and yeast.—E. L. T. in *Minnesota Medicine*.

Social Progress of Socialism

Writing in a recent issue of the *American Labor Legislation Review* on "The Progress of Social Insurance in America," John B. Andrews, New York, secretary of the American Association for Labor Legislation, makes the following astonishing, inaccurate and misleading statement regarding the history of the sickness insurance movement in America:

"It is increasingly apparent that the cost of adequate medical care in America can not be met without insurance against sickness," Mr. Andrews said. "In 1929, the campaign for a universal system of workmen's health insurance had been advanced to a point where a well-considered bill was passed by the New York State Senate. That promising movement was temporarily checked by disingenuous appeals to prejudice. Upon those representatives of the private insurance companies who joined with a certain element in the medical profession—in a period of post-war hysteria—and denounced health insurance as 'Made in Germany,' rests the responsibility for blocking social progress in meeting adequately our sickness problem."

This unfair insinuation that a "certain element" of the medical profession—the inference being probably to organized medicine—denounced health insurance on the ground that it was "Made in Germany" is not only ridiculous and untrue, but an insult to the medical profession of this country.

Since when has the medical profession of the United States placed an embargo on anything beneficial to the health and welfare of the public?

When has the medical profession of this country refused to accept and utilize proved and wholesome contributions to the cause of scientific and preventive medicine, whether they be made by German scientists or research workers of any other race or country?

Who with an unbiased opinion has ever before accused the medical profession of this country of permitting prejudice or "post-war hysteria" to interfere in any way with its active, conscientious and effective campaign to eliminate disease and suffering or improve the health of America's millions?

Organized medicine in America has always opposed compulsory health insurance systems like those operating in Germany, England, and a number of

other European nations, because it believes such programs a menace to competent and high-grade medical service for the public generally, detrimental to the health of the public, and unsound, costly, and impractical attempts to solve a social-economic problem. Health insurance programs that have received the support of Mr. Andrews and his colleagues belong to that class of paternalistic and socialistic projects believed by organized medicine to be dangerous to the welfare of the public and a menace to the sound principles of democratic government.

Mr. Andrews' subtle attack on the medical profession is not unique. Similar methods have been used by others seeking to put over their ill-advised schemes on an unsuspecting public by the use of inaccurate and misleading information. The public has many reasons to be thankful that organized medicine has sufficient courage to expose a lot of bunkum falsely termed "social progress."—*Ohio Medical Journal.*

Sowing Distrust

That the wide discrepancies in estimation of disabilities between physicians employed by insurance companies and those employed by patients has the ultimate result of sowing distrust in the medical profession as a whole was the point made by Mr. R. G. Knutsen, of the Wisconsin Industrial Commission, in a recent address to the Eleventh Councillor District Society. Of course, the commissioner is right. There will always be differences of opinion, but there should hardly be many cases of "wide discrepancies."

The family physician who, deliberately or through inexperience, gives far too high a disability rating, is doing an injury to his patient who wants the truth. On the basis of misrepresentation the patient may spend valuable time and money to secure compensation which he thinks he deserves but which will be disallowed.

The physician on the panel who bends in the other direction will be discovered by both the patient and the industrial commission. His future testimony that should bear weight will be doubted.

Mr. Knutsen took the occasion further to remind us who serve on panels that the majority of our cases come to us "on trust." We are not the family physicians, or generally we are not, and they place themselves in what to them are unknown hands. How willingly, he asks, would we submit to surgery at the hands of a surgeon of whom we knew little or nothing? He then declared that this situation makes it imperative that those on panels recognize that the injured man becomes their patient and that they owe their first allegiance to the patient. Only by so doing, said Mr. Knutsen, will the profession retain an enviable position and render the best service to those who compensate them—the insurance carriers.—*Wisconsin Medical Journal.*

Extravagance for Indigents

Questions relative to the different influences and effects which hospital and medical service, established primarily for the so-called people of moderate means and indigents, have on the public generally and on medical practice are continuously bobbing up.

At the present time, physicians of Los Angeles are considerably confused over certain angles in connection with the erection of a new unit to the Los Angeles County Hospital, built exclusively to care for indigents.

The original estimate of the cost of the new unit was $11,000,000, but a recent statement issued by the building commission indicated that the final cost of the new building would be approximately $16,000,000. The new structure will contain many innovations as well as most of the luxuries found in other costly hospitals or similar institutions.

The questions raised by some members of the Los Angeles medical profession are:

Should a public hospital for indigents excel all private hospitals?

What influence will this hospital have on private hospitals and private medical practice?

"It would seem that a public hospital for indigent citizens could become a menace or pernicious influence to private hospitals and to private medical practice, when such a public hospital excelled in type of construction and equipment the great majority of private hospitals in the United States," stated *California and Western Medicine* editorially in a discussion of some of the questions raised.

"It is to these private hospitals that private citizens who are pay patients must go," that publication continued. "With the present hue and cry concerning excessive hospital costs, would it not be natural for such private patients who do not belong to the indigent or pauper class to feel that they should not be taxed to maintain institutional care for indigents, not only as good but actually superior to that which they themselves could have, and then only at heavy financial costs and stress?

"Ten million dollars for a single division of one public county hospital, a few years ago, would have

been looked upon as an appalling figure. If the total exceeds that sum, to become a possible twelve to sixteen million dollars for the addition of some fifteen hundred additional beds to the institution, and if the annual maintenance charges, because of peculiarities of construction and of arrangements or methods, will run into figures considerably above the costs of private hospitals, then it may be questioned, perhaps, whether something less massive and grand might not have served the indigent sick and injured of Los Angeles County to as good or better advantage.

"And if the massive building should become a visual invitation to lay citizens to contemplate the presumable advantages of so-called state medicine, the members of the medical profession, not only of Los Angeles County but of California and other states in the Union, will have something to think about."

The Los Angeles situation is another example of how ill-advised and impractical, as well as extravagant, enterprises in the general field of public medicine may pave the way for greater abuse of medical and hospital charity; create a belief in the minds of the laity that state-supported agencies, or agencies supported by charity-minded organizations or individuals, are better able to serve the public than the privately-owned institution or the individual practitioner, and popularize still more the growing tendency on the part of a large portion of society to look to and expect the state to provide them with the essentials and necessities of life. It is an accepted principle that it is the duty of the state to provide and care for the indigents, but in doing so the fundamentals of good business, good taste and fair play must be taken into consideration.—*Ohio Medical Journal.*

Medicine a Philosophy

One hardly knows whether medicine, which came first as religion, then an art, now a science, is becoming a philosophy. Be that as it may, "aside from our instruments of precision, we must approach the patient with a philosophic attitude in order to consider him as a whole." Thus speaks the philosopher.

First and foremost, from whence did he come; what is he inherently biologically; what is his push; what is his reserve; what is his reaction to the situation in which he finds himself; what is the outlook; what can be done for him? What disease (biologically) was he born with that will eventually close the picture? Does he need understanding, medical or surgical treatment, economic assistance, or improvement of home conditions? Shall we taffy him or tell him the truth?

The philosophic approach in mental medicine is as follows: We should consider the patient's epoch of life. Is he under twenty, in that particular period so conducive to weakness, neuroses, psychoneuroses, sex undermining, post-infections, and dementia præcox; or does he belong to that other cloistered group of idiocy, imbecility, or with that of conduct disorders?

When he presents himself between twenty and forty, we should regard him as in that browsing-around period. Has adaptation been complete; what are his purposes; what are his failures and successes; what are his reactions; and into which category does he fall?

When he comes between forty and sixty, we should regard him as the dancer who is paying the fiddler, either with his heart, his kidneys, his liver, his teeth, his tonsils, his sinuses, his eyes, his ears, or his prostate.

When sixty and over, pathetic as it may be, we must regard him as an old ship with barnacled bottom, lying in harbor with steam up, but in slow gear, while the captain (his mind) is absent from the deck either in day-dreaming, philosophizing, absentmindedness, playing checkers, or speaking of the good old days. Yea, the good old days that wrecked the ship.

Thus we find the philosopher helpful in mental medicine, which is yet to be cleaved from dogmas.

When we turn to general medicine and surgery, whose cleavage was complete when Jenner gave us a science, philosophy appears a little out of place. To say a man is going to die from what his grandfather died is rather a slap at our so-called scientific medicine; that is, when it applies to chronic arthritis, cardiorenal diseases, etc. It speaks too much of the olden days—"Your father had tuberculosis and died; so will you."

We of the mental game look to the day of scientific precision in our work as practiced by internists and surgeons. We are a little weary of a philosopho-psychoanalytic pseudoscience. It would be most unfortunate if, in our retreats therefrom, we met surgeons and internists returning thereto. We look to them to stand at least on the firing line, or else we will be forced to retreat to padded cells, asylum methods, witchcraft, the moon, and the stars. Consider your patient as a whole, but beware of too much philosophy.

Philosophy is a wonderful thing, but it makes rather wavering deductions of this and that. It's fine for an old man—it comforts him; but it's blinding to youth. Youth is the age of science. The chloroform period is the age of philosophy. If a man has a pain in his abdomen, or a woman has the pains of labor, they call for the youthful hands of science and not the hands palsied with philosophy. In the practice of general medicine, therefore, let us have striving youth with judgment, action, and results, or old men who remain with similar qualities.—*Pennsylvania Medical Journal.*

Naming Sickness

It is increasingly evident at the present day that there are many illnesses to which a name—a special label—can not be attached. It does not follow necessarily that the type of disease, nor the character of the disorder, is less clearly understood merely because it does not fall into a certain category or pigeon-hole. Many types of disease exist which the clinician has come to recognize as clear-cut entities. These, however, are frequently unnamable and unclassified in the sense that, if information is wanted concerning them, it would not be found in a textbook, with a definite nomenclature. Alvarez has discussed this in regard to diseases of the stomach. He has studied a series of consecutive patients with gastric disorders, and only a few of these people with such gastric manifestations could be categorically classified as having one or another of the accepted types of gastric disease. A disorder of the stomach, such as occurs when there is chronic gallbladder disease or when there are other types of reflex stomach symptoms, may simulate and does resemble very closely peptic ulcer, but thorough study of the case does not disclose characteristic findings of ulcer. The patient may have various types of enteritis, but it is not always possible by any means to make an accurate etiologic diagnosis. The tendency in medicine at the present time is to consider these common functional and sometimes organic disturbances with a broad-minded spirit, appreciating that the doctor really knows what is the matter with the patient, although unable to label the disease with a one-syllable, two-syllable, or even three-syllable word. This is distressing to the patient and the patient's friends, who feel that the doctor should be able to attach a specific term to the disease from which the patient is suffering. The physician appreciates this fact and is often wont to give a name to the disease to simplify matters. So long as this physician has the care of the patient, the procedure is perfectly just; but it often tends to confuse if the patient comes into the hands of another physician and tells him that the first doctor told her she was suffering from such and such a disease. It makes for certain difficulties which may sometimes be so disturbing that the diagnosis is not actually obtained. The thought occurs that it would be wise for every doctor to explain to the patient, with the most punctilious attention to details, the cause of illness, thus obviating the necessity of nominating the disease by a specific term.—*New Orleans Medical and Surgical Journal.*

Sex Repression

With the advent of the new psychology there has come the word "repression," the adjective prefixed to this word denoting the type of repression, as "sex repression," etc. Occasionally the word "repressed" is used as an adjective, and we have the now popularly used term "repressed desires." Repressed means to press back.

Briefly, the theory of repression is that parallel lines of thought, one from the conscious and the other from the subconscious, make up mental activity. This activity is purposive and sponsored by our instincts and desires. If the subconscious content is objectionable to the conscious mind, it is censored and repressed or driven back, and life runs merrily on. If the subconscious refuses to yield, a conflict ensues and the devil's to pay. The theory is so simple that the public now generally speak of all kinds of repressions. The *tête-à-tête* over the tea cups resolves itself into a discussion of suppressed desires with all their ramifications.

Those of the world who find a discussion of sex a means of individual satisfaction will always be indebted to the new school for making it possible to clothe it in such language as may be used outside the family boudoirs. Furthermore, the school has been of tremendous aid to the poor striving authors who, by thus disguising sex discussion, are able to get it through the mails and into the hands of those dearly beloved creatures, both men and women, whose biologic functions have been restricted through moral laws or social customs, and who still seek some form of sublimation.

Such a situation is most distressing, but we need have no fear, for with the younger generation it will be but a passing fad. Youth is more interested in the pursuits that end in actual matrimony, despite the fact that some of those in mid-life insist on the

proffered advantages of companionate marriage. The situation will be furthered, however, by those who would but can't, for to them it will always serve as a means of sublimation. The writer believes that popular books so written and plays that are suppressed are patronized generally by men and women past mid-life.

But why thus occupy space in a medical publication? For these reasons: Statements are being made contradictory to medical teachings. Some advocates go so far as to say to our youth, "Why suppress and go crazy or become imbecilic?" And last but not least, victims of the new teaching are coming to psychiatrists for relief. In one case recalled by the writer, sex intercourse was prescribed for a sex difficulty. The patient acquiesced, and shortly thereafter sought the relief of a psychiatrist for aid in correcting a new difficulty, and in addition for relief from a frightful mental state due to syphilophobia.

Contradictory of medical truths is the following statement appearing in a leading periodical entitled *New Morality*: "Too blind a suppression of the sexual instinct had produced a poisonous group of neuroses, insanities, perversions, and morbidities." We challenge this statement by asking psychiatrists how many such cases of insanities they have seen. And have not most of the sex difficulties observed been more associated symptoms than the cause? Again, in another mighty volume, we read that General Grant's drinking was due to sex repression, etc., etc.!

It is most unfortunate that psychiatry should have to bear the brunt of such abnormal psychologic teachings, but so it always has been and so it always will be. Students, lay and scientific, must be born with the belief that mental disease is dependent on the sex organs, sex abuse, or sex life; for each generation seems determined to prove it. One readily senses, therefore, the true psychiatrist's reaction as he quietly sits by and sees fad after fad handicapping his scientific studies; but, as teeth and tonsils have given way to sex repression, he, too, will have the satisfaction of seeing, sooner or later, the belief in sex repression as the cause of insanity scorched and burned in the flame of his scientific study.—*Pennsylvania Medical Journal.*

Losses From Auto Accidents

The increasing toll of automobile accidents in the country annually has created a new and puzzling problem for physicians and hospitals to struggle with.

A large percentage of the bad accounts found on the books of doctors and hospitals—and they total millions of dollars—are those of victims of automobile accidents who have refused to pay or are unable to compensate for services rendered.

Economists have estimated that the cost of hospital care alone for highway accident cases in the United States during 1928 amounted to between fifteen and sixteen million dollars, and that the financial loss sustained by the institutions was between six and seven million dollars. Accident victims who are unable to pay or do not pay for services are carried on the hospital's books as "charity" patients, making an enormous drain on the resources of the institutions and creating a deficit which must be borne at least in part by pay patients.

Due to the situation, the Department of Institutions and Agencies in the state of New Jersey has been conducting a survey of the problem, and some of the information uncovered is enlightening.

Nineteen general hospitals in New Jersey, studied in detail, show that they treated 1,781 highway accident patients who spent 22,440 days in the hospital during 1928. The hospital bills rendered to these patients totaled $106,089, but of this amount only $59,150, or 56 per cent, was collected. A majority of the hospitals studied do not expect to recover even a small portion of the $46,850 unpaid. The survey indicates that the total cost of hospital care of highway cases in New Jersey was somewhere between $600,000 and $650,000 last year, and that the financial loss to the hospitals amounted to between $250,000 and $300,000.

This study does not include physicians who treated the thousands of traffic accident victims, but it is safe to assume that almost every dollar lost by hospitals could be matched by a similar uncollected amount due attending physicians.

What is true in New Jersey is undoubtedly true in Ohio, and because of the larger number of automobiles in this state, the annual losses necessarily must be greater.

That the problem is not limited to the United States is shown by the following letter from a British physician to the London *Daily Mail* and reprinted in the American Medical Association *Journal*:

"I am a physician with a considerable practice, and I have had the misfortunate to live close to a main road on which there is heavy motor-car traffic. In the last two or three years the number of accidents near my house has increased so much as to involve me in incessant work and heavy expenditure.

I am called at all hours of the day, often when I should be on my rounds, to attend to victims. Sometimes they are brought to my house in a desperate condition. My appliances, my splints, my bandages are taken without any payment and are never returned. In the great majority of cases I can recover nothing. Three times, while engaged in bandaging the injured in the midst of the crowd, which is apt to collect on such occasions, I have had my pocket picked. Repeatedly I have had small articles taken from my car. And I find that my experience is identical with that of many of my fellow physicians situated as I am. Can nothing be done to secure fair play for the physician? Or is he expected to lose his own practice and provide gratuitous attendance for everybody on the road, rich and poor?"

How to remedy the situation is not easily answered. Compulsory automobile liability insurance has been suggested by some, but no practicable and workable system seems as yet to have been conceived.

Some states have attempted to meet the situation by giving the hospital the right of lien. The benefits derived from this plan are at the present time obscure.

Some form of protection for physicians and hospitals is long overdue. The question is one which deserves the careful study of authorities and agencies interested in traffic, transportation, safety and insurance problems, as well as members of the medical profession and hospital officials.—*Ohio Medical Journal.*

MEDICO-LEGAL

Mental Capacity Determinable by Physical Condition

[Love v. Love (Md.), 148 Atl. 814]

Margaret Love died, November 2, 1928, aged nearly 96. Certain of her grandchildren who had received no recognition under the will contested it. Verdict and judgment were given in their favor on the issues of testamentary capacity and undue influence. The executor then appealed to the Court of Appeals of Maryland.

Dr. Taylor, who attended the testatrix, testified that she was incompetent to make a valid deed or contract on the day she executed the will. Under the well-settled rule in Maryland, said the Court of Appeals, he was competent to express an opinion as to the mental capacity of his patient without giving any reasons for his opinion. On behalf of the executor, however, it was contended that Dr. Taylor disqualified himself, after expressing his opinion, by stating that that opinion was based on the physical condition of the testatrix; that he was unable to say whether she had sufficient mental capacity to make a gift; that there was nothing unusual or abnormal about her mental condition, except that she was a failing old lady; that he observed nothing to produce her condition of senile decay, except that she was feeble and failing in health; and that he was unable to say when, in a person suffering from arteriosclerosis, as he testified the testatrix was, the disease would interfere with the blood supply of the brain and lessen its functioning.

The question, said the Court of Appeals, is whether the discussion, on cross-examination, of the ground of the witness' opinion showed that opinion to be so lacking in foundation that it must be stricken from the record, on the motion of the executor, notwithstanding that it was properly admitted. The court held that it was not necessary to strike the opinion from the record. The opinion of the witness, said the court, "was undoubtedly weakened, but we can not say that it was nullified. The weight of it was for the jury to determine. So far as we know, it has never been held that physical deterioration may not reach a point where the brain ceases to function, although there may not be any specific mental disease." The rulings of the court below were therefore affirmed, and the case remanded.

Parke, J., however, dissented. The only witness, he said, who expressed an opinion that the testatrix was incompetent when she made the will was the family physician, whose opinion was shown by his testimony in chief and cross-examination not to have been based on any evidence of mental incapacity, and consequently to be without probative force.

Next Month's Journal

Beginning with the January, 1931, issue, the board of publishers is pleased to announce that the JOURNAL will be printed on all-enamel paper. Heretofore the WEST VIRGINIA MEDICAL JOURNAL, like most of the other state journals, has used a superior grade of ordinary book paper. Following another successful financial year, the board felt that the JOURNAL could afford the best, and the new paper will make its first appearance next month.

Arrangements have also been made for a new font of type that will be used in all scientific articles. This new type, known as Caslon Old Face, is a trifle larger than the type used throughout 1930. The present type, which is also Caslon Old Face, will be used in setting all articles of general news.

WOMAN'S AUXILIARY

Harrison County

Mrs. J. E. Wilson, of Clarksburg, was elected president of the Woman's Auxiliary to the Harrison County Medical Society at a meeting of the Auxiliary held in the Dolly Madison Tea House, Clarksburg, on the afternoon of November 6, 1930. She will take office on January 1, 1931, and will succeed Mrs. T. M. Hood. Other officers elected at the November 6 meeting were: Mrs. R. B. Nutter, Enterprise, vice-president; Mrs. B. F. Shuttlesworth, Clarksburg, secretary-treasurer; and Mrs. J. E. Page, Clarksburg, corresponding secretary. Mrs. Hood presided at the meeting.

The program, which was in charge of Mrs. Earl N. Flowers, consisted of a presentation by Mrs. O. W. Ladwig on Moses, the earliest healer of the sick of which the world has any record. Mrs. Flowers told of the mythological doctor, Æsculapius, son of Apollo. Mrs. J. E. Corbin described the official emblem of the medical profession from the time it was originally known as the winged staff of Mercury.

Those in attendance were: Mrs. L. S. Wormal, Mrs. J. R. Carder, Mrs. W. T. Gocke, Mrs. Paul Stamm, Mrs. Earl N. Flowers, Mrs. W. F. Brennan, Mrs. S. L. Cherry, Mrs. H. E. Sloan, Mrs. R. C. Hood, Mrs. T. M. Hood, Mrs. R. L. Osborne, Mrs. I. D. Cole, Mrs. R. V. Lynch, Mrs. W. W. Spelsburg, Mrs. R. S. Coffindaffer, Mrs. W. L. Strother, Salem; Mrs. J. E. Wilson, Mrs. Monroe, Mrs. E. D. Tucker, Mrs. V. E. Selby, Mrs. J. E. Corbin, Mrs. Eugene Wright, Mrs. O. W. Ladwig, Mrs. Johnson, Mrs. R. J. Nutter, Mrs. H. A. Whisler, Mrs. A. T. Post, Margaret Tucker.

Kanawha County

Thus far this year the Kanawha Auxiliary has held five most successful meetings, and an excellent winter program is being looked forward to. The first meeting of the fall season was held at the home of Mrs. I. P. Champe, 1517 Virginia Street, Charleston, at which time a reception was given to the incoming and the outgoing officers. This was followed by another splendid meeting at the country estate of Dr. and Mrs. C. A. Ray near Charleston, with Mrs. Ray as hostess. On October 30 a joint meeting with the Cabell County Auxiliary was held at the home of Mrs. O. L. Aultz, president.

Two meetings were held during the month of November. The first took place on the evening of November 4, at which time Dr. R. H. Paden, of the state health department, showed a number of lantern slides on the correct and the incorrect posture in children. He was followed by Dr. M. F. Petersen, who talked on the feeding of children. The next meeting was held on November 18 at the home of Mrs. E. B. Stephenson, 1603 Virginia Street, Charleston. The program was presented by Dr. N. H. Baker, who gave an address on the care of the teeth, and by Mrs. B. S. Preston, who discussed the use of *Hygeia* in the public schools.

European Cleanliness

Comparison of the relative cleanliness of American and European cities is the theme of an article in a recent issue of *Hygeia*. The author, Ines Stearns Macaulay, bases her comments on a recent tour of European cities by Dr. George Soper to observe street and outdoor cleanliness.

Although American cities are far ahead of some European ones, they are far behind the cleanest European cities. In a two-hour ride about Munich, the cleanest city of all, the amount of litter seen was not more than could have been carried away in a man's hand, Dr. Soper reported.

Litter baskets, attractively designed, securely placed and emptied frequently, are provided in the cleanest European cities. In Paris gutters and streets are flushed with an abundance of water.

Automobiles send a great deal of dust to the gutters and the wind scatters it. A slight breeze in New York causes the air to be filled with dust and scraps of paper. The dust blows into people's eyes and settles on their clothes and in their lungs.

In Germany, Austria, Czecho-Slovakia, and in England, Dr. Soper found that a new system of collection of refuse was being used, which absolutely eliminated dust. The cities own special house cans wihch they lease to householders. The can is emptied into a closed collecting vehicle by means of a shutter, which automatically opens when the can is pressed against it and closes when it is withdrawn, so that it is impossible for dust to escape.

MONTHLY MORBIDITY REPORT

BY COUNTIES

OCTOBER, 1930	Chickenpox	Diphtheria	German Measles	Hookworm Disease	Influenza	Measles	Poliomyelitis	Scarlet Fever	Smallpox	Tuberculosis, All Forms	Typhoid Fever	Whooping Cough
Barbour	----	----	----	----	----	----	----	----	----	----	13	----
Berkeley	----	----	----	----	----	----	----	8	----	----	1	----
Boone	----	31	----	----	2	----	----	2	----	2	7	21
Braxton	----	6	----	----	----	----	1	1	----	----	3	----
Brooke	----	----	----	----	----	----	----	35	----	----	----	----
Cabell	----	10	----	----	----	----	3	12	----	----	1	----
Calhoun	----	1	----	----	----	----	----	----	----	----	1	----
Clay	----	1	----	15	----	----	----	----	----	----	5	----
Fayette	----	1	----	----	----	36	3	7	----	2	9	5
Gilmer	----	----	----	----	----	2	2	----	----	----	----	----
Grant	----	----	----	----	----	----	----	3	----	----	1	----
Greenbrier	----	----	----	----	----	----	----	1	----	----	----	----
Hampshire	----	----	----	----	----	----	----	----	----	----	3	----
Hancock	----	----	10	----	----	----	----	----	----	----	2	----
Harrison	2	5	----	----	----	3	1	18	----	----	4	3
Jackson	----	----	----	----	----	2	1	----	----	----	----	----
Jefferson	----	----	----	----	----	----	----	----	15	----	----	----
Kanawha	2	12	----	----	----	1	----	13	----	8	19	5
Lewis	1	1	----	----	----	----	----	----	----	----	----	----
Lincoln	----	4	----	----	----	1	----	3	----	----	3	4
Logan	----	6	----	----	----	----	----	16	2	----	22	----
Marion	1	2	----	----	----	----	1	10	----	1	3	1
Marshall	----	----	----	----	----	----	----	13	----	1	----	----
Mason	----	----	----	----	4	----	----	----	----	----	----	----
Mercer	----	13	----	----	1	----	----	1	----	----	6	----
Mineral	----	2	----	----	10	4	----	7	----	4	5	20
Mingo	1	2	----	----	----	----	----	----	1	----	9	----
Monongalia	----	2	----	----	----	----	----	4	----	----	5	----
Monroe	----	1	----	----	----	----	----	----	----	----	----	----
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Nicholas	----	----	----	----	----	----	----	1	----	1	1	----
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Wayne	----	1	----	----	----	----	----	----	----	----	----	----
Webster	----	----	----	----	----	----	----	2	----	4	----	----
Wetzel	----	----	----	----	----	----	----	----	----	----	15	----
Wirt	----	----	----	----	----	----	2	2	----	1	2	1
Wood	2	5	----	----	----	----	----	1	----	9	5	----
Wyoming	----	1	----	----	34	26	----	2	----	----	1	7
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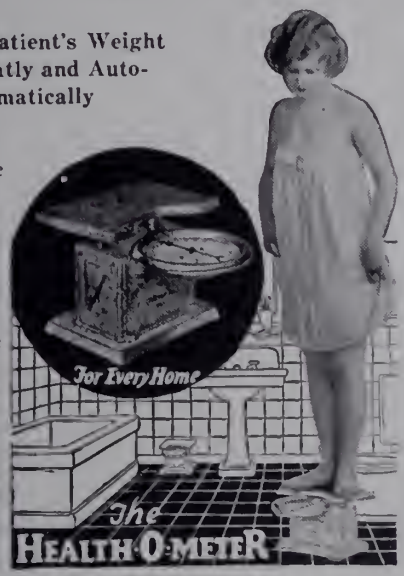

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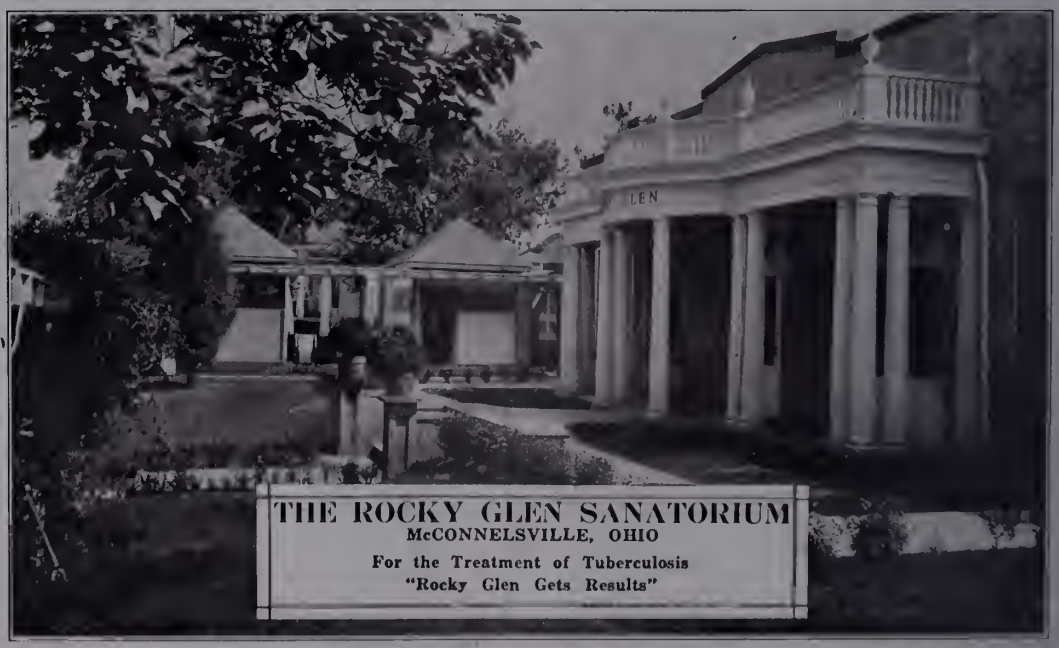

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Published by The West Virginia State Medical Association

IN THIS ISSUE:

Dr. Wm. M. Sheppe on Bronchial Asthma
Dr. R. S. Spray and Dr. B. W. Hess on Agglutinins for Brucella Abortus
Dr. J. Louis Ransohoff on Stomach Surgery
Dr. A. P. Hudgins on the Treatment of Ringworm
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Dr. Edna H. Blossom and Dr. L. C. Davis on Blood Transfusion Apparatus.
Dr. C. H. Maxwell on the Medical Defense Fund

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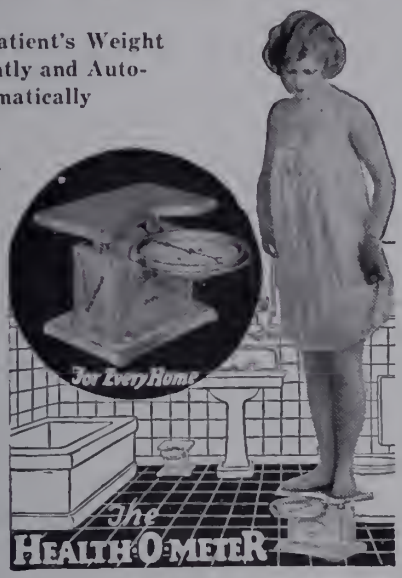

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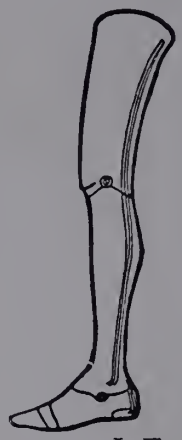

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VOL. XXVI MARCH 1930 NO. 3

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IN THIS ISSUE:

Dr. A. G. Rutherford on the Surgeon and the Hospital
Dr. William S. Fulton on the State and the General Hospital
Dr. R. A. Ireland on Organized Hospitals
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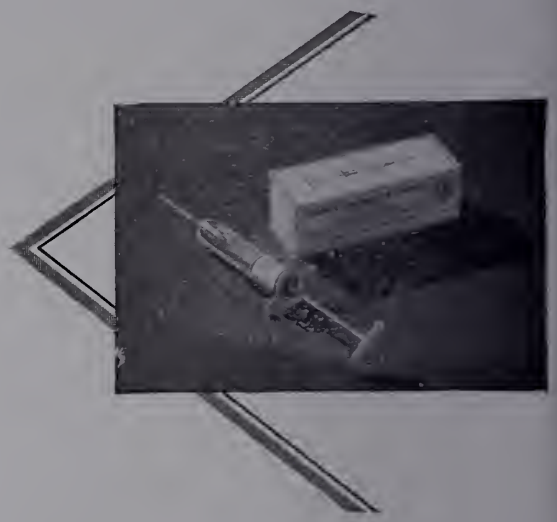

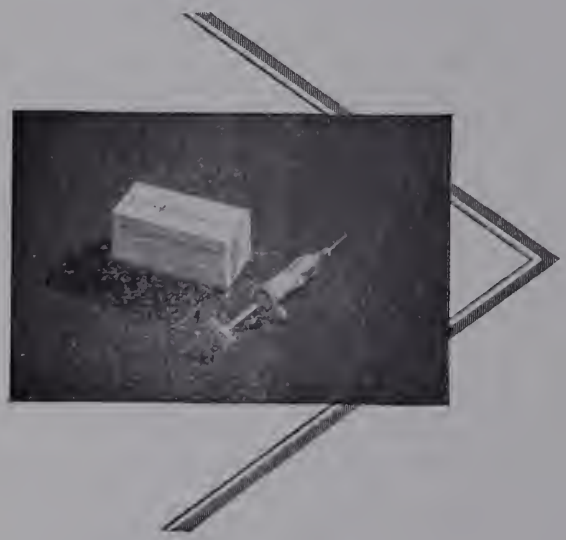

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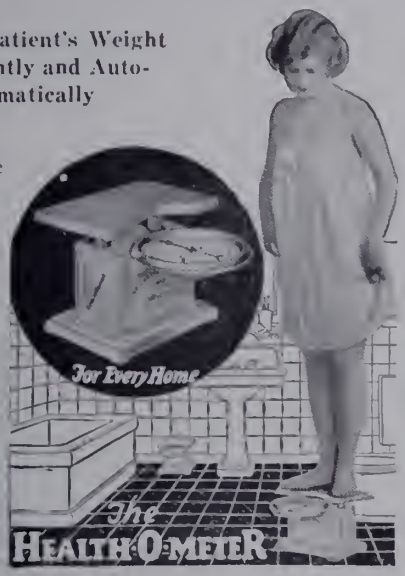

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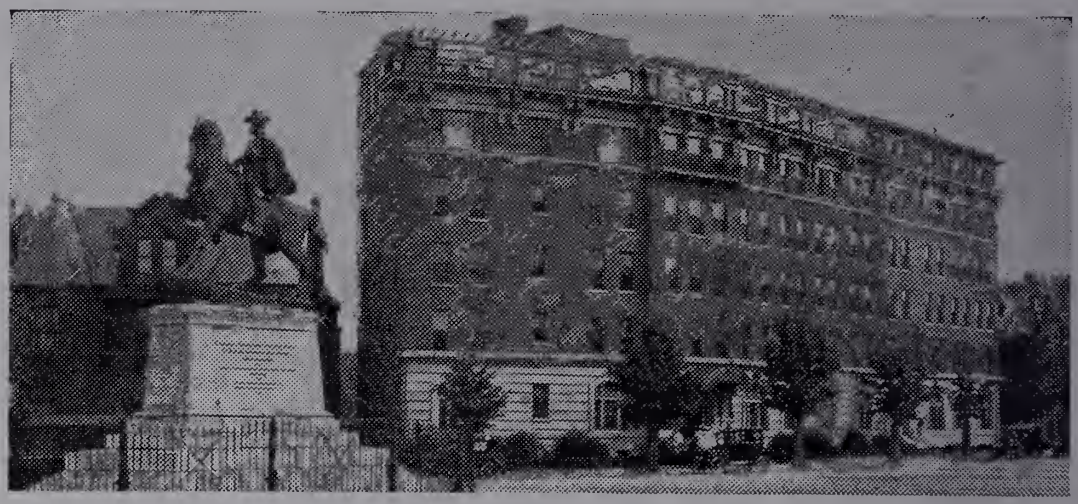

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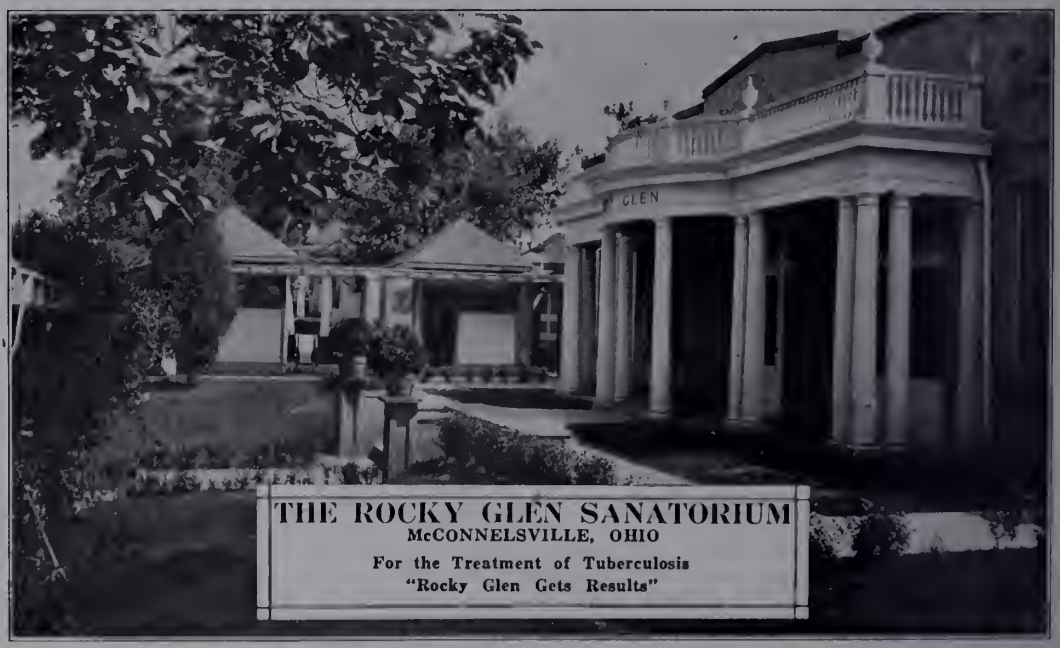

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VOL. XXVI APRIL, 1930 NO. 4

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IN THIS ISSUE:

Dr. Louis G. Martin on Syphilis
Dr. Thomas Bess on Mental Defectives and Sterilization
Dr. Thomas G. Reed on Traumatic Shock
Dr. Russell B. Bailey on Compression Therapy in Tuberculosis
Dr. Knight Reynolds on Eclampsia
Dr. Claude C. Frazier on Delayed Labor
Dr. Norman R. Price on State Medicine
Dr. George G. Snarr on the Ethmoid and Maxillary Sinus

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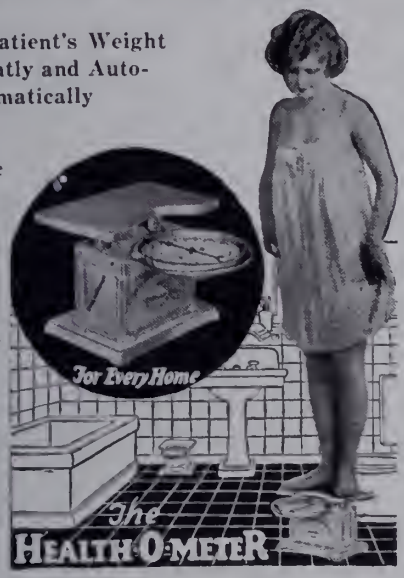

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IN THIS ISSUE:

Dr. George J. Heuer on Acute Abdominal Conditions
Dr. J. O. Rankin on Treatment of Fractures
Dr. C. W. Stallard on Colles' Fracture
Dr. J. D. Sturgeon on Infant Feeding
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Dr. A. P. Hudgins on Syphilis
Dr. G. A. Smith on the Pupil in Diagnosis
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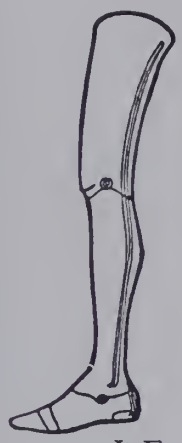

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VOL. XXVI JUNE, 1930 NO. 6

The West Virginia Medical Journal

OFFICIAL PUBLICATION OF THE HOSPITAL ASSOCIATION OF WEST VIRGINIA
AND THE CENTRAL TRI-STATE MEDICAL SOCIETY

Published by The West-Virginia State Medical Association

IN THIS ISSUE:

Dr. Walter E. Vest on Dollars and Disease
Dr. Fred Ben Quincy on Acute Poliomyelitis
Dr. Walter C. Swann on Lipiodol in Bronchiectasis
Dr. C. J. Broeman on Lesions of the Mouth
Dr. R. H. Walker on Rupture of the Rectum
Dr. Edward S. Hamilton on Focal Infection
Dr. Gilbert O. Crank on the Post-Influenzal Heart

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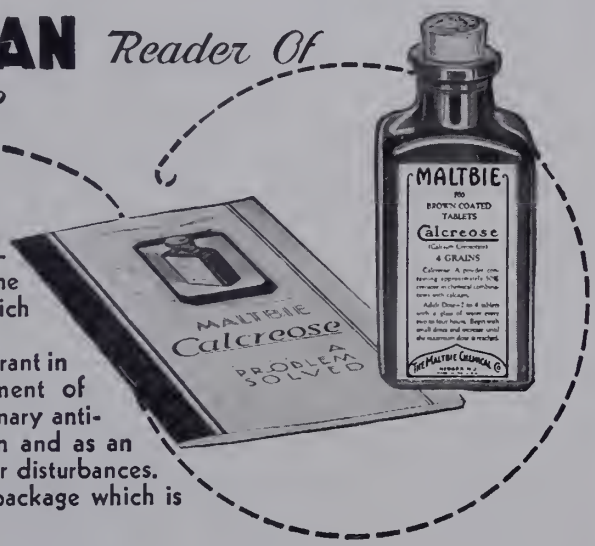

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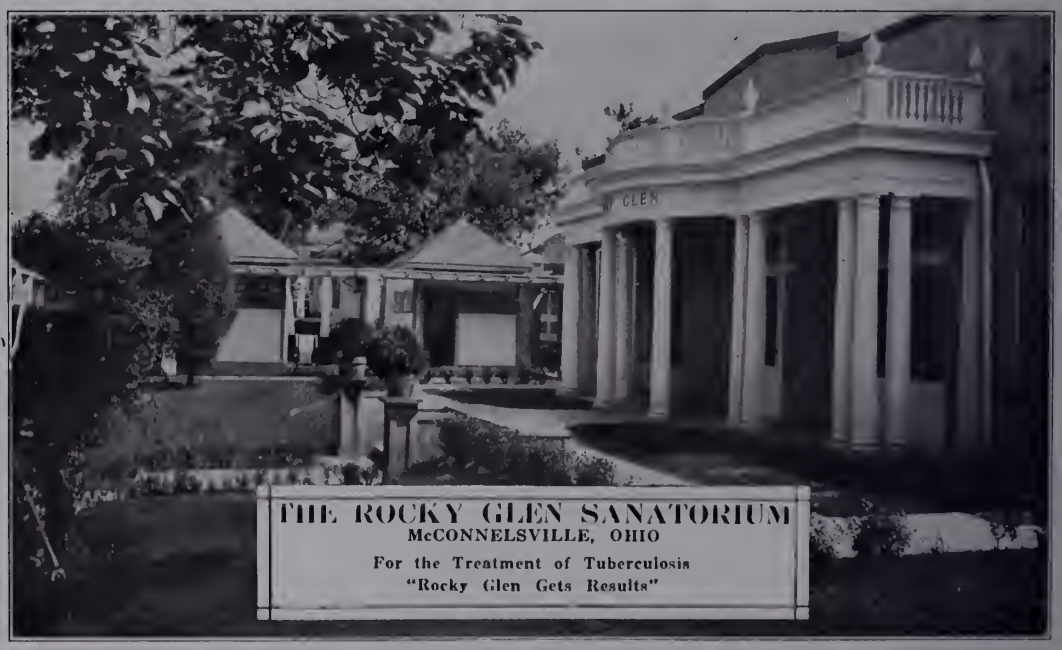

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IN THIS ISSUE:

Dr. George M. Lyon on Epidemic Meningitis
Dr. James H. Smith on Basal Metabolism
Dr. Bankhead Banks on Mortality in Appendicitis
Dr. Joseph C. Bloodgood on Recent Cancer Work
Dr. G. G. Irwin on Vesico-Vaginal Fistulæ
Dr. Frank S. Harkleroad on Post-Diphtheritic Par
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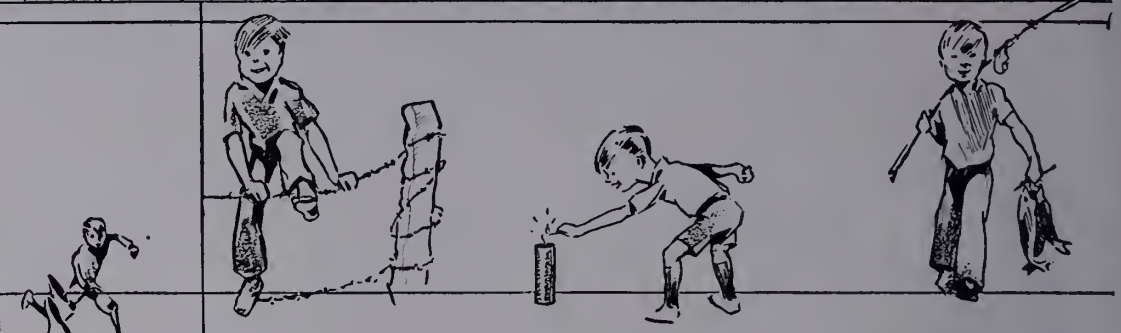
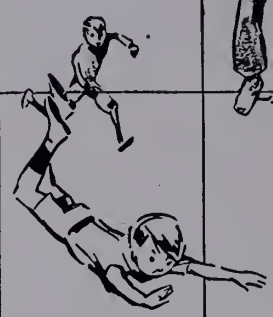


Summer Outdoor Activity Greatly Increases Tetanus Cases



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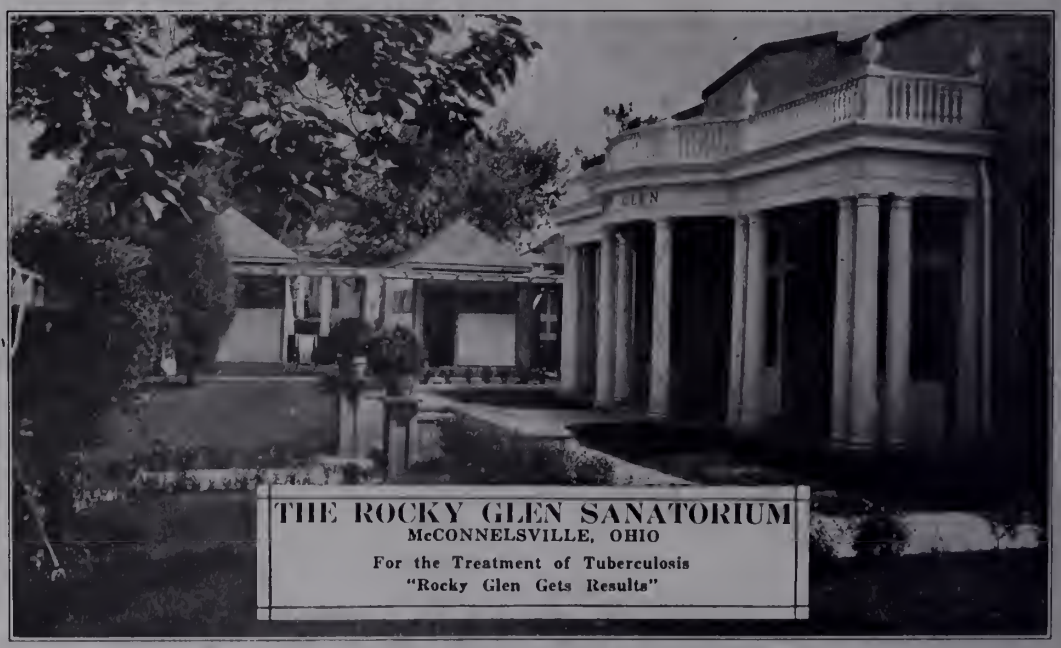

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Dr. R. J. Wilkinson on Gastric Surgery
Dr. Matthew F. C. Zubak on Removal of Tonsils by Electricity
Dr. J. G. Lyerly on Acute Cranio-Cerebral Injuries
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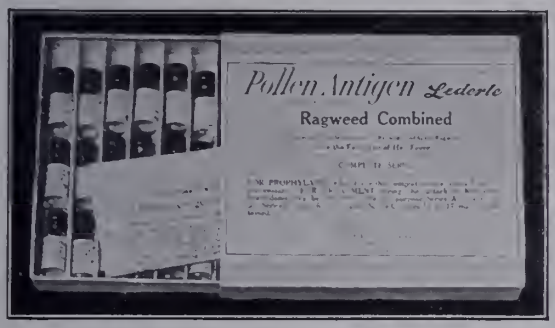

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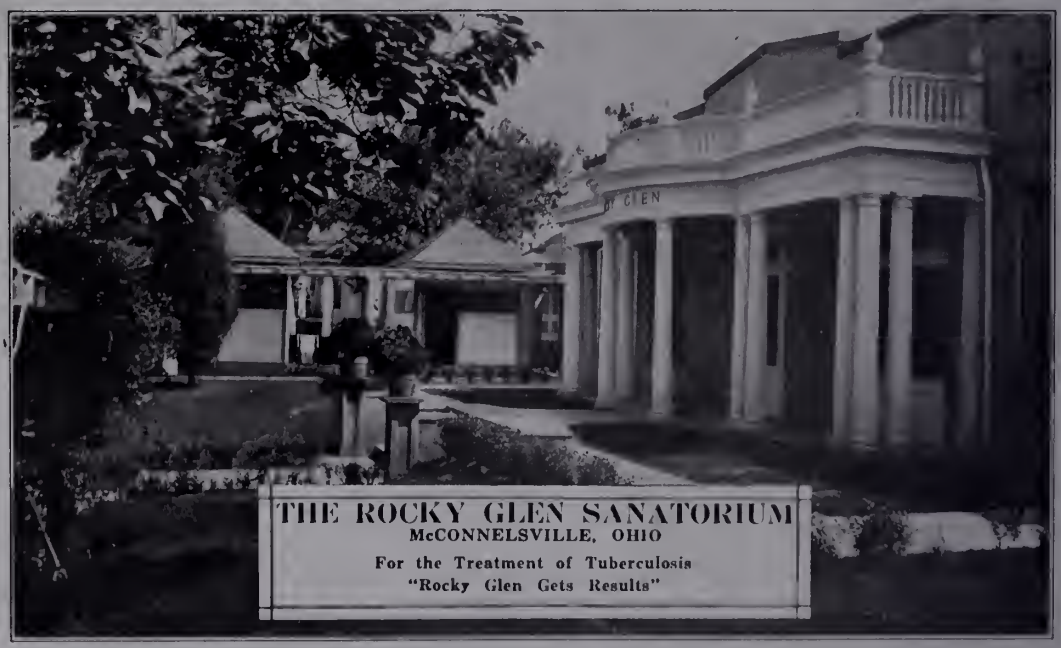

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Dr. George H. Bigelow on Private Practice and Public Health
Dr. Charles McCuskey and Dr. Frank Moxon on Anesthetics
Dr. F. Churchill Hodges on Agranulocytosis
Dr. Creed C. Greer on Rectal Narcosis with Avertin
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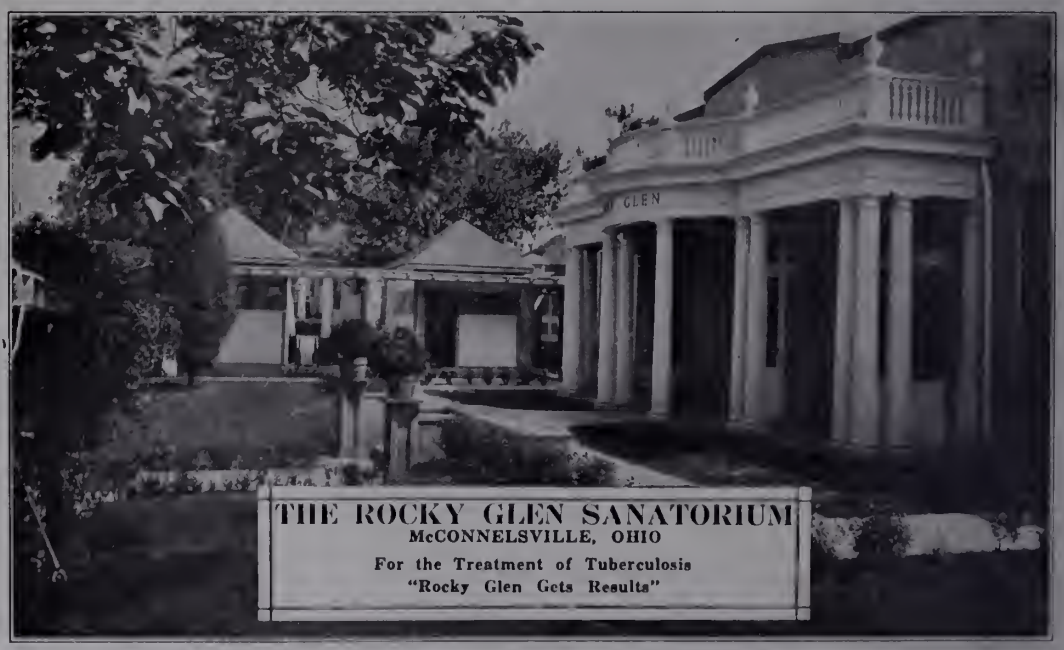

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VOL. XXVI OCTOBER, 1930 NO. 10

The West Virginia Medical Journal

OFFICIAL PUBLICATION OF THE HOSPITAL ASSOCIATION OF WEST VIRGINIA AND THE CENTRAL TRI-STATE MEDICAL SOCIETY

Published by The West Virginia State Medical Association

IN THIS ISSUE:

Dr. Carl A. Hedblom on Surgical Treatment of Pulmonary Tuberculosis
Dr. Thomas W. Nale on Prevention of Puerperal Infection
Dr. J. Morrisset Smith on a New Radical Mastoid Operation
Dr. Willis F. Manges on Sinus Disease and Pulmonary Infection
Dr. Andrew E. Amick on Mental Hygiene in Infancy and Childhood
Dr. Lynn H. Brumback on Obstruction of Upper Urinary Tract
Dr. D. C. Clark on Oral Focal Infection
Dr. W. V. Wilkerson on Pellagra

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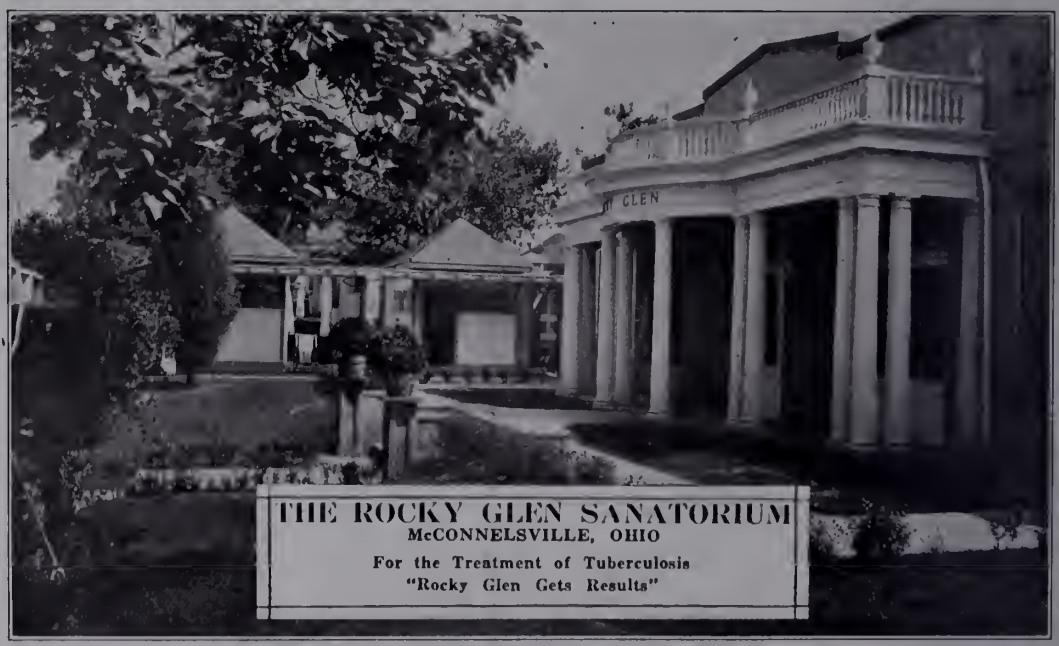

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OFFICIAL PUBLICATION OF THE HOSPITAL ASSOCIATION OF WEST VIRGINIA
AND THE CENTRAL TRI-STATE MEDICAL SOCIETY

Published by The West Virginia State Medical Association

IN THIS ISSUE:

Dr. T. W. Moore on Ophthalmology and General Medicine
Dr. M. Y. Dabney on the General Practitioner and the Specialist
Dr. James H. Smith on Surgery in Diabetes Mellitus
Dr. Elmer H. Arn on Thyrogenic Heart Disease
Dr. Walter M. Simpson on Hyperthyroidism
Dr. T. Jud. McBee on Surgery of the Genitourinary Tract
Dr. William M. Sheppe on the Treatment of Neurosyphilis

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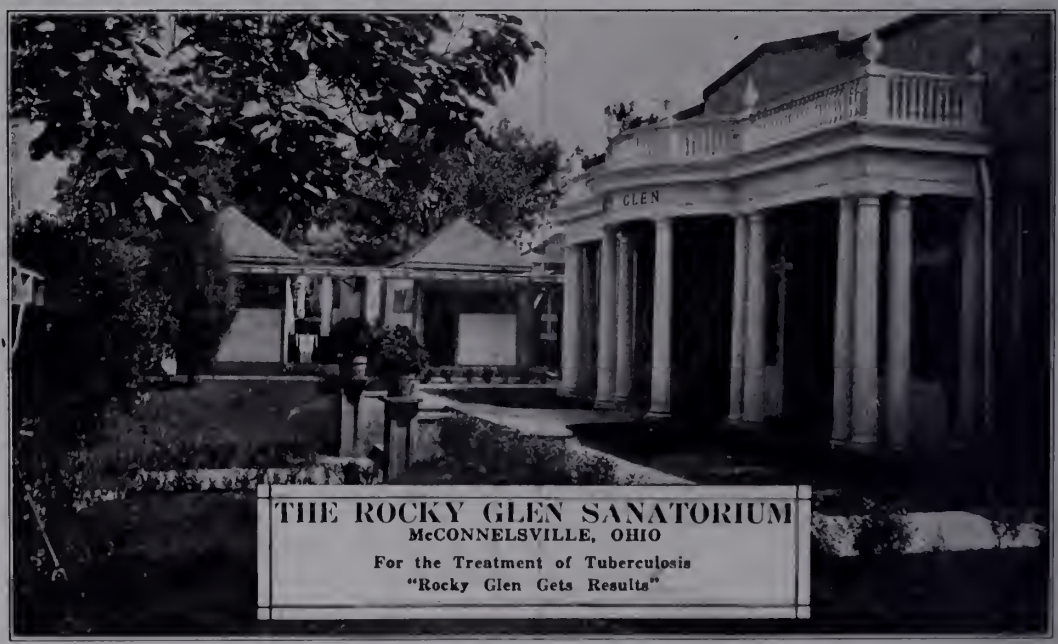

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Published by The West Virginia State Medical Association

The Editor

IN THIS ISSUE:

Dr. James B. Stone on Upper Respiratory Tract Infections in Children
Dr. Albert H. Hoge on the Mild Hypothyroid
Dr. W. Carl Kappes on Thyroid Dysfunction
Dr. William Gerry Morgan on Some Facts About Fads
Dr. C. Fred Fisher on Reduction of Mortality in Acute Appendicitis
Dr. Thomas R. O'Rourk on Paranasal Sinuses and Eye Conditions
Dr. W. W. G. Maclachlan on Clinical Observations in Pneumonia

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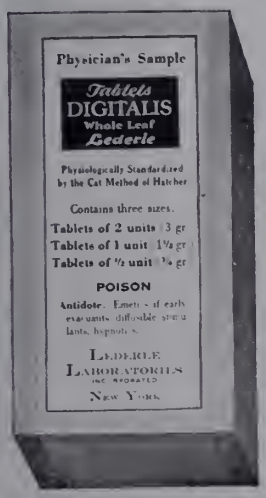

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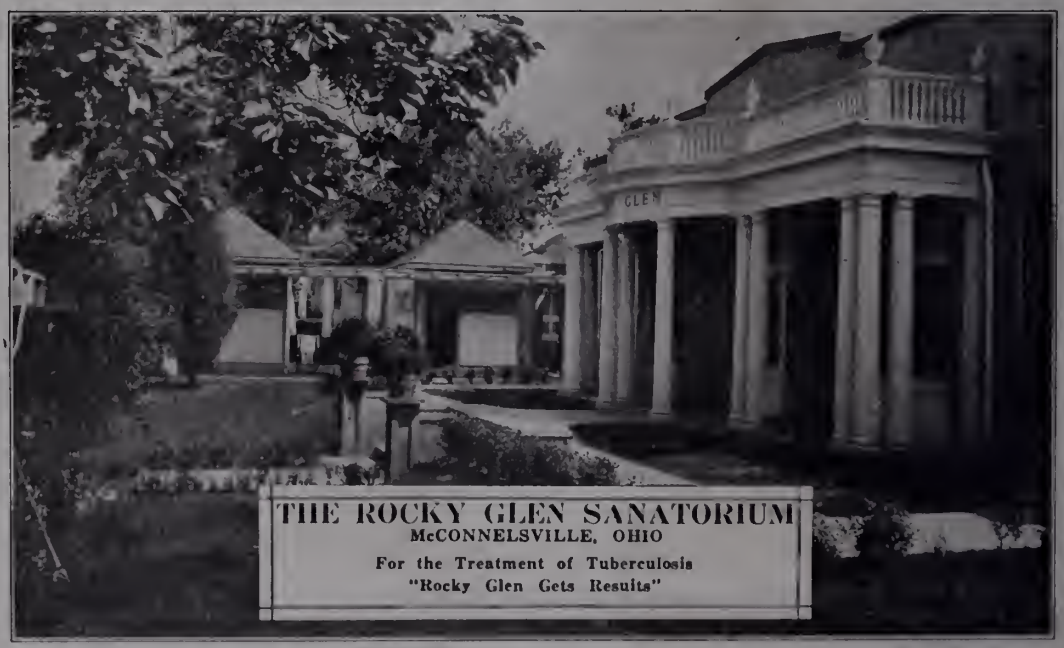

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